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THE TREATMENT OF SUMMER DIARRHEA IN INFANTS.¹

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THE treatment of summer diarrhea in infants naturally may be considered in three parts: preventive, dietetic, and medicinal. In order to appreciate the importance of preventive management it may be well to glance at some of the well-known causative factors that are in constant operation during warm weather. In the first place, all the varieties of diarrhea seen during the year are increased and aggravated in summer. The various mistakes so commonly seen in the feeding of infants take the front rank as causes. Gastric or intestinal indigestion usually precedes a diarrhea. Too frequent feeding, either at the breast or bottle, is a common underlying cause of infantile indigestion. When the bottle is used a larger amount of fluid than the infant's stomach can comfortably hold or digest is very often given. Cow's milk is not properly modified to suit the infant's age and digestion in many cases, or various foods containing large amounts of starch or sugar are employed. With the advent of hot weather the various kinds of infantile indigestion are liable to take on a dangerous diarrheal form.

an epidemic of summer diarrhea seems to be fairly constant. Some years ago Dr. Seibert, in studying this subject, showed that an epidemic would start when the average minimum temperature reached 60° F. This condition begins in June and lasts through September, which are thus the dangerous months. The accompanying table shows the number of deaths from diarrheal diseases in New York City during the past five years in children under five years of age, through the summer months, with the mean temperature of the corresponding periods.

A glance at this table shows that July gives much the highest death-rate, and the average mean temperature of this month is from one to four degrees higher than August. The slight difference in temperature, however, is not sufficient to account for the much higher mortality. In 1895 it will be seen that the mean temperature of August was three degrees higher than July, which is most exceptional for summers in this latitude, and yet the mortality of July was 1084 against 633 for August. The explanation is that after several weeks of warm weather the weaker babies die off. Hot weather usually begins late in May or early in June, so that by July there has been a month of fairly continuous heat. After several days of very great heat, the severe diarrheas begin, often when the temperature has had a distinct and grateful fall.

DEATHS UNDER FIVE YEARS.

	1894.		1895.		1896.		1897.		1898.	
	Deaths.	Mean Temp.	Deaths.	Mean Temp.	Deaths.	Mean Temp.	Deaths.	Mean Temp.	Deaths.	Mean Temp.
June	361	70.41	281	72.80	363	69.80	220	67.45	157	71.15
July	1107	74.87	1084	72.50	880	76.80	914	75.92	835	76.05
August	499	70.57	643	75.60	564	76.10	446	73.22	650	75.33
September	346	68.81	441	70.80	245	67.20	319	66.99	465	70.27

This is due to an acute fermentation or putrefaction of the gastro-intestinal contents, with the consequent absorption of toxic substances which quickly induces grave, if not fatal, symptoms. The heat of summer first depresses the vitality and weakens the resisting power of the infant, and then induces subtle and dangerous changes in the cow's milk which is its common food. The degree of heat required to start

When the baby feels the greatest depression from the heat the deleterious changes in the cow's milk are most marked, hence bottle-babies are by far the greatest sufferers. Not only does the lactic-acid fermentation begin, but various colonies of bacteria are multiplied, such as the saprophytes or those of the proteus group. Infants under two years are the greatest sufferers. Preventive treatment, if carried out with thought and thoroughness, will do much to alleviate this annual summer scourge. Such treat-

¹ Read at a general meeting of the New York Academy of Medicine, June 1, 1899. For discussion see page 87.

ment will include in its scope an oversight of the city, the domicile, and the life and habits of the children. The responsibility of the city is to be doubly watchful in the interests of public health. The streets must be kept scrupulously clean. All garbage and decaying animal and vegetable matter should be promptly removed and destroyed. Perishable food stuffs, and particularly cow's milk, require careful watching and regulation. While milk with a certain minimum proportion of cream is now called for there should be a certain standard of freshness required as well. The number of bacteria found in each cubic centimeter of milk usually bears a direct ratio to the age of the milk. What is needed is a better regulation of a city's milk-supply at its source, namely, the dairy-farm. If the dairy farmer were compelled by government rules carefully laid down and enforced to regulate the production and handling of milk according to cleanly and scientific principles, and such milk could be delivered to the consumer within twelve hours, summer diarrhea in infants would be reduced to a minimum. In a city like New York, which draws its milk-supply from such a wide area and from great distances, it would be difficult to devise a scheme of milk inspection on the lines above noted that would be practicable, but it is the goal to be sought for. If city infants could be supplied with a clean and fairly fresh milk, the illness and mortality from summer diarrhea would lessen in a very marked degree. In this connection it is interesting to note the report that the city of St. Paul now requires an official inspection of all cows from which the milk supply for that town is taken.

Another way in which the city can modify the deleterious effects of the heated term is by planting trees and furnishing small parks and breathing-places for infants and little children. In a thoughtful and suggestive article, entitled "Vegetation a Remedy for the Summer Heat of Cities," in the *Popular Science Monthly* for February, 1899, Dr. Stephen Smith shows how trees are of the greatest utility in modifying and equalizing climatic conditions. He states that it is a well-established fact that an average temperature of the air of 54° F. is best adapted to public health, as at that temperature the decomposition of animal and vegetable matter is slight, and normal temperature is most easily maintained. Every degree of temperature above or below this point requires an action of the heat-regulating power to maintain a proper equilibrium. As the heat-regulating centers in infants and young children are most unstable, the direct action of prolonged heat upon their bodies is a powerful agent in increasing summer mortality from all kinds of illness. In a

large and densely populated town the solar heat is conserved and reflected by the stone and asphalt of the streets as well as by the bricks and mortar of buildings. The artificial heat generated in the latter for culinary and manufacturing purposes is also a factor to be considered. Even during the night the stones by retaining their heat prevent any fall in temperature, sufficient to afford relief. Here is where the modifying effects of trees would be most beneficial. As trees maintain an average mean temperature of 54° F. in all seasons, it is easy to see what a constant cooling influence they would possess in an atmosphere of 90° F. Add to this the constant exhalation from the leaves of watery vapor that has been absorbed from the moisture in the soil as well as from the surrounding air, and the cooling effect is much enhanced. This takes place most actively during the heated portion of the day when it is most needed. A general purification of the air is not the least benefit to be derived from vegetation, as CO₂ is absorbed and O given out, just the reverse of what takes place in the animal economy. The purifying and cooling influence of trees placed uniformly through the city would have a marked influence upon the public health, especially that of little children. The Tree Planting Association of New York has proven that various species of trees are adapted to our soil, and, with a little care, can be made to thrive. It seems, however, in a matter that concerns not only the health but the beauty of the town, the city itself should be responsible for a uniform and continuous effort. If our blazing thoroughfares were lined with shade trees, the summer heat would not be so intolerable and unhealthful to adults and children alike.

Much may be done in the domicile, to prevent diarrhea among the infant inmates. The principal efforts will be in the line of extra cleanliness. Food of all kinds must be removed when the meal is ended. Milk must be boiled or pasteurized as soon as it is delivered in the morning, then properly diluted or modified in bulk for the day and placed upon ice ready for use. The less it is handled after this the better. All diapers as soon as removed should be soaked in a solution of chlorid of lime or similar disinfectant, before being washed. By keeping the rooms well closed during the heat of the day and freely aired at night, some equalization of temperature will result.

Preventive treatment can attain brilliant results in a watchful oversight of all the hygienic details of the infant's life. Mothers, particularly among the poor, should be taught to consult physicians oftener with reference to preventive agencies, especially when threatened by an epidemic of summer diarrhea.

Babies are often dressed too warmly and with needlessly tight-fitting garments in summer. In very hot weather a single garment is often sufficient as it is comfortable and cooling to be able to freely move the arms and legs. Plenty of fresh air can be had early in the morning and late in the afternoon without exposing the infant to the heat of midday, even in the shade. While trips to the seaside are healthful care must be exercised in reference to day excursions where heat and fatigue or slightly spoiled food may do more harm than the fresh air will do good. It is here assumed that the parents are unable to give the infants a change to the seaside or country, which, of course is highly desirable. In case a change of air is feasible for a bottle-baby, a locality where the milk-supply is known to be good must always have the preference. Frequent bathing is valuable in prophylaxis. In dispensary practice I often direct mothers to let little children be put in a tub and play in tepid water for several hours. Both the temperature of the air and that of the body are highest in summer from about two to five in the afternoon, and this is the time they are stripped and allowed to play in the water. The effects of the heat at the worst part of the day are thus neutralized. Babies too small for the tub may be sponged with water to which alcohol or vinegar has been added. In reference to diet very explicit directions must be given. *In general, a bottle-baby should have less bulk of food and a higher dilution of milk in very hot weather than it is accustomed to under more favorable conditions.* If this simple precaution were taken much summer diarrhea would be avoided. The intervals between feedings may also be prolonged if the digestion shows any signs of derangement, but water is to be freely given during these intervals.

With reference to milk, I prefer boiling or pasteurization to sterilization. In case of prolonged and intense warm weather, sterilization may temporarily be preferable.

The final effort of preventive treatment is to note the first signs of gastric or intestinal indigestion, as both may often be checked by simple dietetic or medicinal means before a marked diarrhea begins.

In the dietetic treatment of summer diarrhea, bearing in mind that a majority of the cases consist largely of milk-poisoning, all forms of milk must be temporarily withheld. Even the breast may be withdrawn in nursing babies until vomiting ceases. In the interval, water may be frequently given, but in small quantities at a time, if the stomach tends to reject it. The common mistake is in giving too much nourishment at this time, as the infant seems to be weak and in need of support. It is not the food taken, but that which is assimilated that sup-

ports, hence it is folly to force milk upon a baby at a time when the digestive powers are weakened, if not entirely arrested. Many a summer diarrhea would be stopped at the very beginning if milk were entirely withheld for from twelve to forty-eight hours. When it is necessary to withhold milk for any length of time, other forms of nourishment may easily be substituted. One of the most easily procurable and satisfactory is egg-water. The white of an egg is thoroughly stirred in half a glass of cool water. This forms a pure and easily assimilable albumen water. The only objection is its tastelessness, and I have overcome this by the addition of about ten drops of aromatic spirits of ammonia. In case there is a tendency to vomit, this aromatic stimulant in small doses, as above, seems to check the stomach irritation. Among other substitutes for milk may be mentioned thin gruels made from barley or wheat flour and cold whey. When the cereals are used, the starch may be easily dextrinized by one of the preparations of diastase that are now on the market. If cow's milk is withheld for several days or longer, mutton-broth from which all the fat has been carefully skimmed, makes a good substitute. Expressed beef-juice with the fat removed and diluted with cool water makes a stimulating and nourishing drink. When the acute symptoms have subsided and milk is resumed, it must be tentatively begun at long intervals and with high dilution. If a prescription to be filled at a laboratory were written it might call for fat, 1 per cent.; sugar, 4 per cent.; proteids, 0.50 per cent.; or plain fresh milk may be diluted five or six times with sugar-water. By thus starting with a considerable reduction of the casein and fat, these solids may be gradually increased to a proportion that is proper for the infant's age and development. The difficulty of digesting the tough curd of cow's milk is a constant source of trouble. After trying various methods of overcoming this difficulty, a proper dilution of the milk with decoctions of the cereals as advised many years ago by Jacobi, has yielded the best results in my hands. In hot weather a gruel made of wheat or barley flour, and partially or completely dextrinized, will modify and attenuate the clots of casein in a favorable manner. In a series of experiments recently made through the courtesy and with the cooperation of Professor Graham Lusk at his laboratory in the University Medical School, liquid rennet was added to various preparations of milk and heated to 40° C. Equal parts of barley-water and milk gave smaller and more flocculent curds than equal parts of plain water and milk. A dog with gastric fistula was fed on consecutive days with these solutions, and the contents of the stomach withdrawn at the end of half an hour. The

clots were finer and apparently more digested when the barley-water and milk was used than in the case of plain water and milk. Aside from the results of such experiments, the clinical effect of diluting with the gruels must commend their use. Babies are less apt to vomit tough, stringy curds, or to pass them by the bowel.

The medicinal treatment usually assumes less importance in direct proportion as the preventive and dietetic management are carefully followed. Indiscriminate and abundant drugging in this disease are now relegated to the limbo of the past, astringents, antiseptics, and opiates alike. The real indications for drugs are few and easily apprehended. As summer diarrhea is so apt to be of a putrefactive nature, all agree upon the necessity of completely clearing out the gastro-intestinal tract as a necessary start in treatment. In most cases, when the physician is called, the stools are loose and there may be vomiting. By at once stopping all milk, the stomach is soon emptied, and the principal indication is to clear out the bowel. If vomiting continues, drafts of tepid water may be administered, which, when rejected by the stomach, washes out that organ. I do not believe it is often necessary to wash out the stomach with the tube. Sometimes when there is excessive irritation of the stomach, with much production of mucus, one washing out, however, will give relief. I usually employ tablet triturates of calomel, $\frac{1}{10}$ of a grain every hour until six or eight have been administered. These small doses act as a sort of stimulant to the bowel, increase glandular secretion and usually effectively clear the canal of its fermenting contents. The drug is also supposed to have some antifermentative effect. A good sized dose of castor oil is also effectual, and is followed by a sedative effect on the mucous membrane. If the stomach is very irritable, it may be difficult to administer on account of vomiting. Elimination may sometimes be hastened by irrigation of the lower bowel with normal salt solution. Mucus as well as fermenting milk may be thus removed. For those not accustomed to this procedure, a hard rubber rectal tube is preferable, as the soft tube bends on itself on account of the length and marked curve of the sigmoid flexure in infants. The drug that I have found most useful in the summer diarrhea of infants is the subnitrate of bismuth in large doses. As far as I have observed the subcarbonate, salicylate, and subgallate of bismuth and beta naphthol bismuth have no decided advantage over the subnitrate, which is everywhere procurable. A baby of from six to twelve months can take from ten to twenty grains of the subnitrate every two or three hours. The insoluble quality of the bismuth and its sedative

local effect make it most valuable. Irritation and fermentation, even under proper dietetic management, remain longest in the ileum and colon and this tract is reached by the local action of the bismuth.

Most of the so-called antiseptics have irritating qualities, and I do not think that even in antiseptic action they act better than large doses of bismuth. It is manifestly impossible to put the intestinal tract in any condition that can be called antiseptic by the administration of drugs. Small doses of aromatic spirits of ammonia, 10 to 20 drops, well diluted with water, seem to stimulate the mucous membranes and refresh the infant. I give alcohol very sparingly in these cases as it seems to lower the digestive powers. In case of great weakness or collapse from 10 to 30 drops of whisky may be given well diluted. Formerly I gave whisky almost as a routine treatment in these summer diarrheas, but now it is used only for special indications and temporarily. If the discharges are profuse and exhausting and the baby sinks into a semi-stupor, with depressed fontanelle, very free stimulation by whisky and ammonia is indicated, as spurious hydrocephalus is thus ushered in. There is one drug that was formerly much abused and is perhaps not used enough now in proper cases, namely, opium. It should never be given combined with other drugs; indeed, diarrhea mixtures of all kinds are to be deprecated. Opium is contraindicated until the bowel has been thoroughly emptied of irritating contents, when the stools are scanty and foul-smelling and when cerebral symptoms threaten. In cases, however, in which rapid peristalsis and profuse glandular secretion persist, a few moderate doses of opium are most valuable and may aid in saving life.

The order of importance in treatment is that sketched in the preceding portion of this paper: first, prevention; second, careful dieting, and, finally, drug administration. If the first two are carefully carried out it will not so often be necessary to employ medicines.

HIGH ALTITUDE AND HEART DISEASE.¹

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My attention was first attracted to this subject years ago by the following interesting case: In November, 1886, I was consulted by Dr. N., a practicing physician in the interior of New York State, who was on his return from Colorado. He was a powerfully built man of five feet nine inches in height, and 185 pounds in weight. Until October,

¹ Read at the fourteenth annual meeting of the American Climatological Association, held at New York, May 9, 10, and 11, 1899.

1885, he had enjoyed robust health, and prided himself on his strength and feats of physical endurance. He then one day carried a barrel of flour up stairs on his shoulders, and on reaching the top was seized with precordial pain and palpitation. From that time his health failed, a slight dry cough developed, and once he expectorated a little blood. This led him to consult two eminent physicians of New York City, one of whom diagnosticated incipient tuberculosis of the right apex, while the other pronounced the examination negative. Both, however, advised him to go to Denver, which he did in June, 1886. Upon reaching an altitude of 2000 feet *en route* he began to experience considerable distress in the chest, and on arriving at Denver, at an altitude of 5300 feet, he was almost, as he stated, in convulsions. During his six-weeks' stay his dyspnea and precordial distress were so great that he at length consulted Dr. Dennison, who, he said, found his lungs normal, but demonstrated marked dilatation of the right ventricle. The advice was given to seek a lower altitude, and the patient went to South Dakota, where the elevation was but 1500 feet. His symptoms gradually left him, and after a few days he was able to ride horseback without discomfort.

This was about the middle of August, prior to his appearance at my office. My records, made after two examinations on successive days, state in brief that the lungs were normal, but that there was a short, rough presystolic and a faint blowing systolic apex murmur with accentuated pulmonic second sound and increase of dulness to the right. The pulse was somewhat accelerated, feeble, and slightly irregular. I made a diagnosis of mitral stenosis and insufficiency, either resulting from or aggravated by the unwise physical effort of the year before, and which accounted for the unexpected ill effect of high altitude. I have never heard from the patient since that time.

CASE II. is that of Dr. W. H. B., whom I first examined in February, 1887, making a diagnosis of fatty degeneration, chiefly of the left ventricle, due to coronary sclerosis and accompanied by attacks of angina pectoris. In November, 1887, he reported himself as well except for inability to walk rapidly on account of dyspnea. During the summer of 1889 he made a trip to Alaska, concerning the advisability of which he had consulted me, and against which I had urged the necessity of his being subjected to considerable risk in traveling over high mountains on the Canadian Pacific Railroad. Upon his return, however, he reported that at an altitude of 7000 feet he had been able to walk without any discomfort whatever.

That serious structural disease existed is attested by the sad fact of his sudden death the following May, 1890, in an attack of angina pectoris at the age of seventy-three. No necropsy was made; but during life the somewhat thickened arteries and accentuated clapping aortic second sound had left no room for doubt of the existence of arteriosclerosis and resulting myocardial changes.

CASE III.—About ten years ago one of my uncles, then seventy-two years of age, visited me *en route* to Denver to pass the summer. His radial arteries felt like a string of beads, and he had secondary left-ventricle hypertrophy, the heart still being competent. I greatly feared the effect of Denver altitude, and cautioned him accordingly; and yet he subsequently reported that while there he had been able to walk without the slightest inconvenience. If he had noticed any effect from the altitude it had been for the better.

CASE IV., like the one immediately preceding, is reported from memory, as no notes were ever made. The late Dr. S. of Chicago, whom it was my privilege to know intimately, once drew my attention to a loud mitral systolic murmur which he said he had had for years, but without particular symptoms. The circumstance that impressed my memory at the time was his comment to the effect that notwithstanding that murmur, which he regarded as indicative of valvular incompetence, he had just made a trip to Colorado Springs, an altitude of 6000 feet, and had been able to walk about with less discomfort than his wife, who so far as he or anybody else knew possessed a healthy heart. This lady was rather short and inclined to corpulence, it may be remarked in passing. The doctor at that time was about sixty years of age.

CASE V.—H. P., aged twelve years, was seen in June, 1892, one month subsequent to an operation for appendicitis during convalescence from which anasarca and other signs of destroyed compensation of a long-standing mitral lesion had appeared. At the date of my visit digitalis and other appropriate treatment had begun to restore cardiac competence, and my opinion was desired upon the advisability of the boy's return to his home in Trinidad, Col. At the age of six years, while resident in that place, he had suffered from acute articular rheumatism, and then for the first time had been found to have a mitral lesion. During the next four years he had been in tolerable health, but had not been able to play with other children because of cardiac symptoms. Two years before my examination he had again suffered from rheumatism with pleuritis and pericarditis for which the precordia had been blistered. Nevertheless, he had been able to remain at Trinidad, at an

elevation of 6000 feet, until the development of the appendicitis.

Upon examination I discovered mitral regurgitation with great secondary dilatation, pleuropericardial adhesions, and old pleuritic adhesions at the base of both lungs, and great visceral engorgement. Of course the advice was given not to return to Trinidad, where his tuberculous father was residing. The patient passed the remainder of the summer of 1892 in Canada, and I believe regained such a measure of compensation that during the fall of that year he was taken back to Colorado. I did not see the boy again, but have since learned indirectly that he failed progressively thereafter, and died about four months after his arrival there.

CASE VI.—During the summer of 1894 an attorney, aged forty years, consulted me for an opinion concerning the state of his heart, and, briefly stated, was found to have a pronounced but perfectly compensated insufficiency of the aortic valves. He furnished the following interesting history: He had but shortly before returned from a two-weeks' visit in Colorado, where at the altitude of Denver and Colorado Springs he had ridden about on his wheel without any discomfort. One day he attempted the ascent by train of Pike's Peak, which has an altitude of 14,137 feet. Distress became so great that he was in collapse by the time the summit was reached. The descent was made at once; his consciousness returned before he reached the foot, and when again at the altitude of Colorado Springs he mounted his bicycle and rode away, apparently none the worse for his foolhardy adventure. I have not seen the patient since my first examination.

CASE VII.—At the present writing I have in charge a lady aged about forty years, who has been in bed for the last four months in an attempt to preserve from total loss what still remains of a rather inadequate compensation of an extreme aortic stenosis. She has known of her cardiac lesion for the past seven years. Although she had been cautioned against high altitudes she was compelled about five years ago to accompany a tuberculous stepson to New Mexico. At first they went to Colorado Springs, where they remained a month. There she was not able to walk more than a few hundred feet without sitting down to recover breath. For some reason they then went to Sante Fé, 7000 feet, but remained only two days because of the great distress occasioned to the lady. In consequence they next traveled to Eddy in the Pecos Valley, where she was able to stay until the young man's death, two years subsequently. While there, at an elevation of about 3000 feet, the lady experienced no particular discomfort, being able to walk about the house and

grounds without dyspnea. She is positive that she has never been as well since her sojourn in New Mexico, and in fact was compelled to seek medical advice for her cardiac asthenia soon thereafter.

CASE VIII. is that of a lady, aged sixty-eight years, who, immediately before consulting me, had endured the railway journey from San Francisco to Chicago over the Sierra Nevada and Rocky Mountains. At the summit of the former, 7500 feet, and again at Hagerman Pass, 11,500 feet, she suffered considerably from difficulty in breathing, but at Colorado Springs she experienced no discomfort. Nevertheless, she thought it prudent to sit still in the car and not attempt walking. This patient had a pronounced mitral systolic murmur and great secondary cardiac dilatation, particularly of the right auricle, as shown by the turgid external jugular veins and by percussion. There was evidence also of arteriosclerosis; and as the pulsations of the thin-walled and probably dilated aorta were visible in the suprasternal fossa and communicated to the distended veins, the erroneous diagnosis had been made of aortic aneurism. Rest in bed, aided by the administration of strophanthus and cathartics, lessened the cardiac dilatation markedly and more promptly than I had dared to hope for, and soon thereafter I lost sight of the patient. Six months later she died in charge of a homeopathist, who, I was told, said she developed an ovarian cyst.

CASE IX.—Last summer Miss N., aged twenty-one years, was referred to me by Dr. Minor of Asheville, N. C., because she had not been able to endure the 2500 feet altitude of Asheville, and had to return to her home in Chicago. She stated that she had been forced to leave there on account of the dyspnea experienced whenever she attempted to do any walking, although such had not been the case when there two years earlier. Examination disclosed free mitral regurgitation, and in addition extensive adhesions between the pericardium and left pleura, as shown by retracted lung border and friction râles on inspiration. The apex was fixed in the sixth left interspace fully two inches outside of the mammary line. The right heart was not bound down. Hepatic and other visceral engorgement was extreme, and disappeared on appropriate treatment, with the lessening dilatation of the right ventricle. But the ready dilatability of the right heart has its bearing on the patient's inability to endure the moderate altitude of 2500 feet.

Of course I realize that nine cases afford altogether too slender a basis on which to build a theory regarding the effect of high altitude on the heart and circulation, but they seem to me worth a few minutes study in the hope that they may aid us in

deciding the question whether or not the existence of heart disease always prohibits residence or travel in elevated regions. That such is the case is the general opinion, I think, an opinion in which I formerly concurred.

Regnard, on the contrary, thinks that cardiac lesions *per se* do not contraindicate sojourn at high elevations when such residence is necessary; yet he would not advise it because there is nothing in the condition of health of these patients demanding such climatic treatment, in fact, hematosis would be diminished; but aside from this no harm would result from the decreased blood pressure; and if a cardiac sufferer chose to endure the discomfort he would at first experience until he became acclimated, he could do so with impunity. Regnard evidently bases his opinion on the study of the phenomena of mountain sickness which his experiments have led him to attribute not to diminution of blood pressure, but to want of sufficient oxygen supplied to the tissues and organs—"l'asphyxie des tissus survient."

Although such may be the explanation of mountain sickness, I, nevertheless, think that Regnard's view regarding the effect, or rather, want of permanent effect on heart patients, is too sweeping, as some of my foregoing cases show. There is a quickening of the pulse-rate, and this it is which I think must be reckoned with in considering the question of altitude in cardiac disease.

In an interesting paper in the London *Lancet* of October 15, 1898, Sunderland reports the arrest of menorrhagia at high altitude, 5800 feet, and suggests the explanation that by reason of diminished air pressure on the abdomen and in the lungs the large distensible veins within the peritoneal cavity become dilated, and thus favor a more rapid return flow of blood from the congested vessels within the pelvis. Unfortunately, this theory is untenable, since it must assume an expansion of the tissues in the walls and organs of the abdomen, and as Regnard argues, such an expansion of solids and fluids of the body is impossible when the entire surface of the body is subjected to uniform diminution of atmospheric pressure. It would be far otherwise if the vessels were filled with a gas instead of blood. Sunderland's explanation is correct only in part. The menorrhagia is arrested in consequence of more active circulation undoubtedly, yet this acceleration is not due to lessened blood pressure occasioned by lessened air pressure, but I believe, to those modifications of the respiratory movements incident to lowered atmospheric pressure.

According to Regnard the effect of high altitude is to quicken respirations at first and render them

more shallow. When, however, the individual has become accustomed to the diminution of air pressure, the depth of respiration increases and may even exceed the average. That this increase in the depth and frequency of respiration must accelerate the blood-flow will become apparent upon consideration of the effect of respiratory movements on the circulation. Briefly stated it may be said that with each inspiration pressure falls within the two venæ cavæ in consequence of their contents being aspirated into the right auricle and ventricle. This latter chamber, therefore, receives and discharges an increased supply of blood into the pulmonary artery, while under the dilating influence of inspiratory expansion of the lungs the flow within the pulmonary vessels is hastened. The consequence is that toward the height of inspiration and during the fore part of expiration a larger volume of blood is discharged into the aorta and pressure within this vessel rises. During the latter part of expiration and in the beginning of inspiration, on the contrary, the reverse obtains. If now respiratory movements be quickened and deepened, as at high altitudes, the rate of the heart's contractions must undergo a corresponding acceleration.

Another factor in hastening the flow of blood to the heart is the action of the diaphragm. According to physiologists, the descent of this muscle by diminishing the size of the abdominal cavity causes an upward flow of blood out of the abdominal veins into the inferior vena cava and thus exerts a pumping action. It is evident, therefore, that herein lies another by no means insignificant explanation of the beneficial effect of the high altitude in Sunderland's cases of menorrhagia.

That an acceleration of the circulation is not merely theoretic is substantiated by the statement of Regnard and others who declare that the pulse may reach even 130 or 140 beats to the minute. Furthermore, Regnard reproduces three sphygmographic tracings which show a diminution in the size as well as increase in the rate of the pulse at an elevation of 1050 meters, while at the summit of Mont Blanc, 4810 meters, the smallness of the pulse becomes still more pronounced. Now this diminution of the pulse must be due either to engorgement and weakness of the right ventricle, in consequence of which it discharges an abnormally small volume of blood into the pulmonic system, or to the fact that the heart in its entirety handles a small amount of blood with each cardiac cycle. The former hypothesis is untenable, since it is at variance with the effects observed in menorrhagia. Stasis in the right heart would have led ultimately to increased engorgement of the uterine veins and capillaries and

thus have aggravated the condition. Therefore we must assume that the smallness of the pulse at the summit of Mont Blanc was owing to the rapidity of the cardiac contractions, while its diminution of tension was not due to dilatation of the arteries from lessened air pressure, but to the smallness of the blood-wave resulting from the rapidity of the heart-beats.

Let us see how this simple explanation can be applied to the foregoing nine cases. Cases II. and III. were instances of arteriosclerosis without valvular disease and in both arterial tension was consequently increased. This threw extra work upon the left ventricle, which in Case III. was adequately met by compensatory hypertrophy, while in Case II. the presumably degenerated myocardium was unequal to the task and dyspnea on exertion resulted. At 7000 feet, however, the quickened return circulation in the veins relieved pressure in the arteries, the weakened left ventricle found its work easier in consequence, and the patient could walk about without discomfort. For the same reason the third patient was able to spend the summer in Denver without consciousness of any difference between the altitude there and that of Cleveland, where he resided.

Cases IV. and VI. were instances of regurgitant disease, the one mitral, the other aortic, and both patients had experienced no difficulty from exercise at an altitude of about 6000 feet. The reason for this seems to me to lie partly in the diminution of arterial tension and partly in the relief felt by the left ventricle. Diminution of pulse tension would tend to lessen the force of the regurgitant stream in either case and thus lighten the work of the heart. In mitral incompetence the dilatation of the pulmonary vessels and quickening of the flow through them incident to deepened respirations would relieve the right heart, and it is conceivable that dyspnea might actually be lessened thereby. As in regurgitant lesions the tendency is for the pulse-rate to be quickened, the heart ought to find but little difficulty in adjusting itself to the acceleration of the venous flow occasioned by lowered atmospheric pressure, and I believe such is the case when complications do not prevent.

In Case VIII. there was free mitral leakage with a greatly distended right auricle, and yet the old lady suffered from dyspnea and cerebral congestion only at altitudes considerably higher than that of Colorado Springs. This must have been owing to her remaining seated in the car, so that notwithstanding the more rapid flow into the right auricle the resistance in front was lessened, as already explained, sufficiently to offset the increased discharge into the auricle. Had she attempted to walk about she would probably have felt very short of breath.

Cases V. and IX. were likewise examples of mitral insufficiency, but complicated by pericardial and pleural adhesions. Here were conditions that would obviously interfere with pulmonary expansion, and would occasion dyspnea under lowering of air pressure even without the existence of a valvular defect. There was probably some increased play of the diaphragm which promoted the flow in the inferior vena cava more rapidly than it could be disposed of by the hampered heart. In the young lady's case the adhesions binding down the left ventricle restricted its systole, while at the same time the unfettered right ventricle was free to receive and discharge its contents until the pulmonary system became surcharged and dyspnea resulted. In a word, pleural and pericardial adhesions furnish a mechanical hindrance to a proper adjustment of both respiratory and circulatory apparatus to a diminution of atmospheric pressure.

Case I. was an instance of mitral stenosis and Case VII. of aortic constriction. In both an unyielding barrier to the blood flow existed, and time had to be allowed for the stream to pass the point of obstruction. In stenosis systole is slow and forcible so long as compensation is adequate. Acceleration of the circulation at high altitudes would quicken cardiac contractions; with the shortening of systole time would not be allowed for complete emptying of the chambers back of the constriction; stasis in the pulmonary vessels would be promoted with corresponding dyspnea that might readily grow urgent on exercise.

CONCLUSIONS.

1. All forms of cardiac disease do not contraindicate sojourn at a high altitude.
2. The ill effects of low atmospheric pressure in some forms of cardiac disease are explicable on the hypothesis of acceleration of venous flow and corresponding quickening of the heart beats.
3. Consequently those forms with which high altitude is likely to prove incompatible are pronounced aortic or mitral stenosis, and regurgitant disease complicated by pleural and pericardial adhesions.
4. On the other hand, patients with uncomplicated regurgitant lesions or arteriosclerosis with or without myocardial changes, may endure low atmospheric pressure without injury.

Yellow Fever in Mexico and Central America.—The epidemic at Vera Cruz is still spreading, about fifty new cases being reported each week. The mortality has been high, averaging about 47 per cent. At Panama 34 cases have been reported, with 18 deaths.

CYSTITIS; ITS CAUSE AND TREATMENT.

BY GEORGE T. HOWLAND, M.D.,
OF WASHINGTON, D. C.

THE different opinions that have been held, and continue to be held to a certain extent, as to the cause of cystitis, are many and varied. C. Monsell Moullin,¹ in his very interesting work, speaks correctly when he says, "It is better that the peculiarly misleading term, 'catarrhal cystitis' should be dropped." Melchior² states that while he does not deny the possibility of the occurrence of catarrhal cystitis, so far he has never met with it. Guyon³ expressly states that there is no variety of cystitis that is not purulent. Cohnheim⁴ also states that pus is always present in the urine in cases of cystitis, whether the inflammation is acute or chronic.

That the starting-point in cystitis is due to an infection, and that the disease is continued by the action of one or more of the various pathogenic micro-organisms, may be said to be an axiom as far as this disease is concerned. The easiest avenue through which an infection may occur is through the urethra, in which normally a number of different organisms are constantly present. Most of these organisms are non-pathogenic, but the colon bacillus is present in a very large proportion. It is still undecided whether the deeper portions of the male urethra, if healthy, harbors pathogenic organisms for any length of time. When the urethra has been altered by stricture or by enlargement of the prostate the chances of pathogenic organisms being able to maintain themselves in it are greatly enhanced. In women who have borne many children, in whom the urethra is dilated and patulous, an infection may occur by the organisms passing into the bladder from the urethra without the aid of instruments. In women the neighborhood of the meatus urinarius is never free from micro-organisms, and cultures of the colon bacillus mixed with others can nearly always be found. The bladder may also be infected from the kidney, either when the kidney or its pelvis is diseased, as in pyelitis or pyelonephrosis, or even when the kidney is healthy the organisms may be eliminated from the body through it and thus infect the bladder.

Reymond⁵ has proven beyond any question that bacteria can enter the bladder direct from inflammatory areas in the neighboring organs. He found cystitis of frequent occurrence in women suffering from inflammation of the uterus or of the Fallopian tubes and in the majority of cases proved by culture

that the organisms were the same in both organs. As an additional proof he found in a case of salpingitis in one tube a localized cystitis on the same side of the bladder. An infection may come from rupture into the bladder of purulent collections in other abdominal viscera, as for instance, tubal, ovarian or perityphlitic abscesses.

The direct predisposing cause of cystitis has not yet been fully determined. We know that pyogenic organisms may be present in a normal bladder and never set up cystitis. This has been proved by experiments both on the lower animals and on human beings. The typhoid bacillus and many other pyogenic organisms are excreted by the kidneys and pass through the bladder without doing it the slightest harm. This shows that the presence of bacteria alone is not sufficient in the normal bladder to set up an inflammatory reaction. It is well known that after a slight traumatism of the bladder wall cystitis nearly always results. Under this head we can place cystitis following catheterization and instrumentation of the bladder, also the cystitis produced by stone in the bladder. We also find cystitis accompanying the growth of either benign or malignant neoplasms of the bladder wall. The ingestion of irritating drugs, by their caustic effects on the vesical mucosa, prepare a suitable soil for the entrance of the bacteria.

A question at present receiving much important consideration is whether the gonococcus of Neisser is or is not capable of producing cystitis. The French observers believe that this germ cannot produce a true cystitis, yet a few cases have been reported which point to a pure infection by this organism. Kroguis and Barlow⁶ each record cases, as does Melchior, and more recently Wertheim⁷ demonstrated before the Berlin Obstetrical and Gynecological Society a preparation from a case of gonorrheal cystitis which showed the capillary and precapillary veins filled with gonococci and a condition of gonorrheal thrombosis and thrombophlebitis. The cystitis was secondary to a gonorrheal vulvovaginitis and was associated with infection of both ulnar joints. The microscopic sections were made from a portion of the mucous membrane excised during cystoscopic examination. A small portion of the excised mucous membrane was placed in prepared blood-serum with the result that a pure culture of gonococci was obtained. Wertheim says, regardless of the statement of Guyon, Bumm, Sanger, and others (that a gonorrheal infection of the bladder is always a mixed infection), that the finding of gonococci alone in this case proves beyond

¹ "Inflammation of the Bladder," p. 22, 1898.

² "Cystite et Infection Urinaire," Paris, p. 342, 1895.

³ "Leçons Cliniques sur les Affection Chir. de la Vessie et la Prostate," Paris, p. 611, 1888.

⁴ "Vorles. u. Allg. Path., Leipzig, 1880.

⁵ "Ann. des. Mal. des Organes Gen. Urin., Paris, April, 1893.

⁶ "Arch. f. Dermat. u. Syph., 1892.

⁷ "Zeitschr. f. Geburtshilfe u. Gynäkologie, Band 35, Heft 1, 1898.

doubt that pure gonorrheal cystitis can occur. A gonorrheal thrombosis and thrombophlebitis had never before been demonstrated, and the writer believes that a step toward a better knowledge of this disease has been made. He says it is useless to seek for the gonococci except in the very acute stage as they very soon disappear. On the other hand, Bauzet, in a very interesting paper on this subject, makes the following statement: "The gonococcus of Neisser is not proved to have pyogenic properties, except as regards the mucosa of the urethra, the conjunctiva, and the female genital organs." I have seen a number of cases in which cystitis was present or followed directly after a posterior urethral gonorrhea, but I have never been able to find the gonococcus of Neisser alone; it was always accompanied by other pyogenic organisms.

The pathogenic bacteria which have been most commonly found in cystitis are the following: bacillus coli communis, streptococcus pyogenes, staphylococcus pyogenes albus, citreus, and aureus; bacillus lactis aerogenes, tubercle bacillus, gonococcus of Neisser (mixed infection), the typhoid bacillus, and several varieties of the proteus. We may state that from our present knowledge the following facts may be laid down as the cause of cystitis:

1. Cystitis is always caused by the presence of bacteria.
2. The mere presence of bacteria is insufficient to cause cystitis; a further predisposing cause is necessary.
3. Under favorable conditions any pathogenic organism may give rise to cystitis.
4. The entrance of pathogenic organisms into the bladder may be through the urethra, through the ureter from an infected kidney, from inflammatory areas in the neighboring parts, and through the blood-stream and the lymphatics.

From what has been said in regard to the cause of cystitis it is plain that the prevention of this disease depends upon the avoidance of local congestion and of the entrance of the germs into the bladder. Local congestion may occur in spite of our best efforts to prevent it, and septic germs may enter the bladder from causes over which we have not the slightest control. It is seldom that we are called to see a case of cystitis in which these features are not already present.

Proper hygienic and antiseptic precautions are necessary in all cases of surgical interference in the urethra and bladder and all instrumentation in or about the urethra or bladder must be conducted under strict antiseptic precautions. The entire genito-urinary tract should be made as near aseptic as possible and this can be accomplished through the

administration of certain drugs which have the power of preventing the formation of bacteria in the bladder. Acute cystitis is best treated by rest in bed. Free catharsis should be established in every instance, and the patient should have one or more watery movements of the bowels during each twenty-four hours. This is best accomplished by the administration of sulphate of magnesia every second or third day. If pain (tenesmus) is severe a narcotic is indicated. Morphin is especially useful if there is loss of sleep. A method that I have used with good results when pain on urination is severe is to instill a few drops of a four-per-cent. solution of cocain, and after a few minutes from ten to fifteen drops of a six-per-cent. nitrate of silver solution. Another procedure from which I have seen good results is the use of rectal irrigation of hot water for ten to fifteen minutes, followed by a hot enema of 25 to 30 drops of tincture of opium in four to six ounces of warm starch water. Suppositories of opium are useful in allaying pain. One that I am very fond of, and from which I have had good results, is the following:

Ext. hyocyami	gr. i
Camphoræ monobrom.	gr. ii
Morphin sulphat.	gr. ss
Cocoa butter	q. s.

The diet should be bland; during the acute stage, nothing but milk and Vichy, 4 ounces of each being administered every two hours. Of drugs there is a long list to choose from. I have used many of them and none has given me such good results as has been derived from the use of urotropin in 5 grain capsules, four times daily.

We are advised never to wash out the bladder during an acute attack of cystitis. This is good advice, as long as the urine remains bland and the bladder is emptied at each act of urination. But the urine should be watched and as soon as it presents any evidence of undergoing decomposition irrigation should be begun at once. For this purpose a warm two-per-cent. solution (100° to 105° F.) of boric acid or ichthyol may be used to good advantage. One of the best formulæ for irrigation is that introduced by Lobingier,¹ viz.:

Acidi borici	3 i
Borax	gr. xxx
Sodium chlorid	gr. xv
Aquæ	Oii.

Warm to 100° or 105° F. The irrigation can be performed through a double-current catheter or a meatus nozzle, after the method suggested by Janet of Paris. The latter method is by far the best and is aseptic.

In the treatment of chronic cystitis active inter-

¹ MEDICAL NEWS, October 15, 1892, p. 425.

ference is always necessary, and even then a permanent cure cannot be assured. To-day the disease is generally treated under four different heads, *vis.*: first, by medicines; second, by irrigations; third, by direct topical treatment, and fourth, by surgical interference. The treatment of chronic cystitis by drugs with an idea of producing a cure is fallacious. That certain drugs do exert a beneficial influence over some of the symptoms cannot be denied, and it is wise to administer a drug that answers the requirements the best in each individual case. Many different drugs are advised; some act well in some cases, while in others no appreciable diminution of the symptoms have been observed. In 1895 Nicolaier¹ called the attention of the profession to urotropin as a drug to be used in the treatment of urinary affections, and especially its property of preventing fermentation of the urine and the development of bacteria. In my opinion it is the best and safest drug that we have at our command. I have been using it during the past three years, and I have yet to find a case in which any disagreeable after effects were observed. As a urinary antiseptic it is superior to any other drug that I know of. The dose is from 3 to 7 grains four times a day. Urotropin has no direct effect on any existing lesion or inflammation; it simply renders the urine aseptic, and is thus a valuable aid in conjunction with other local treatment, except in cases of plain bacteriuria and ammoniacal decomposition without any inflammation of the mucous membrane of the bladder. In such cases it is a specific.

Irrigation of the bladder in chronic cystitis is recognized as one of the best methods of treatment at our command. The only method that should be followed is that of irrigation through the meatus by the meatus-nozzle, as suggested by Janet of Paris. The strictest aseptic precautions must be observed, such as cleansing the glans penis, the meatus, the urethra, and especially the instrument used, as well as the hands. Irrigation may be practised by allowing a small quantity of the irrigating fluid to run into the bladder and then have the patient void it, or better, allow a sufficient amount to run in until the bladder is moderately distended or until the sensation of a full bladder is conveyed to the patient. This latter procedure is the best as the entire mucous surface of the bladder is thus thoroughly cleansed.

When there is much pus and mucus present in the urine it will be well to use a one-sixteenth-per-cent. solution of salicylic acid as recommended by Bryson.² With the same end in view a 1-per-cent. solution

of nitrate of silver, bichlorid of mercury, 1 to 50,000 or 1 to 60,000, or a 1½-per-cent. solution of carbolic acid may be used, but none of these is so pronounced or lasting as the solution of salicylic acid.

In commencing with this form of treatment it is best to give two treatments a day, one in the morning, the other in the evening. At the morning séance it is best to employ one of the stronger solutions, and a milder solution, such as the one suggested by Lobinger or Thompson, at the evening treatment. After the most distressing symptoms have disappeared, if the urine remains alkaline, with a tendency to throw down phosphates, Harrison³ recommends the use of 5 grains of citric acid to the pint of warm water. When the urine remains purulent Nunn⁴ advises the use of quinin, 1 grain to the ounce of water, to which should be added 1 drop of nitric acid. In these cases I have used a 1-per-cent. solution of ichthyol with a good deal of benefit.

At the first blush it may appear that this method of treatment is fraught with danger to the ureters and kidneys. In my experience I have never observed any symptom that would point to this complication, and I believe that it is next to impossible to force fluid into the ureters or kidneys by irrigating the bladder from the meatus. I have experimented in the way suggested by Lewin and Goldschmidt,⁵ and by Guyon and Courtade,⁶ and never once have I been able to force the fluid into the ureters or kidneys from the meatus through the bladder.

The practice of instilling medicine into the bladder in the treatment of cystitis was introduced by Guyon of Paris who is a great advocate of this method of treatment. The solutions that are most used are nitrate of silver in the strength of from 1 to 15 per cent., and corrosive sublimate in the strength of 1 to 10,000 to 1 to 2000, from 15 to 60 drops being instilled at one sitting. The amount introduced is allowed to remain in the bladder from 15 to 30 minutes, when it is washed out with a mild antiseptic fluid. I have found that iodoform in sterilized oil is very efficient in the strength of 5 to 10 per cent. This method is especially recommended by Guyon for the treatment of tuberculosis of the bladder.

Surgeons for San Francisco.—On July 5th the War Department ordered eleven additional surgeons to report to General Shafter for duty in the new general hospital at the model camp in San Francisco.

¹ *Deutsche Med. Woch.*, No. 34, 1895.

² *Jour. Cut. and Gen.-Urin. Dis.*, February, 1892.

³ "Twentieth Century Practice," Vol. I., p. 239.

⁴ *Lancet*, February 23, 1898, p. 356.

⁵ *Virchow's Archiv*, 1893, p. 33; 1898, p. 104.

⁶ *An. des. Org. Gen.-Urin.*, March, 1897, p. 225.

CLINICAL MEMORANDUM.

A CASE OF PLACENTA PREVIA.¹

By CHARLES A. HELVIE, M.D.,
OF CRETE, NEB.

C. Q., aged twenty-two years, English, housewife, married, entered the maternity of the Erie County Hospital, Buffalo, N. Y., July 20, 1895, at 4.30 P.M.

Personal History.—She had never had any sickness. Menstruation always regular, four-weekly type. She was slight in figure and appeared anemic.

Family history.—Mother died of "brain fever."

Physical Examination on Admission.—Inspection: no abnormalities. Palpation: Foot presentation with head to left. Position transverse with dorsum in fundus.

Auscultation.—Fetal heart heard above umbilicus; frequency 160; regular.

Vaginal Examination.—Vagina roomy. Cervix effaced. No dilatation.

Mensuration.—Height above pubes of navel 13 cm., of fundus uteri 19 cm. Distance from ensiform to fundus 4 cm. Distance between spines, 22 cm. Between crests 26 cm. Conjugates, extremes 19 cm.

Urine.—No specimen obtained before labor began.

Labor.—Pains began at 7.30 P.M., three hours after admission.

First Examination after Beginning of Labor.—8.45 P.M. Dilatation complete. Bag of water intact and near vaginal orifice. Pains fair.

Second Examination.—10.00 P.M. Foot found presenting to anterior and nearly a finger's length from vaginal orifice. Pains same as before.

Third Examination.—11.15 P.M. Bag of water still intact but near vaginal orifice. Presenting foot half a finger's length in. Pains almost ceased for a time.

Fourth Examination.—12.30 A.M. Membranes intact. Fetal heart sounds not heard. No fetal movement detected.

There had been some hemorrhage all along, so that the napkins had to be changed frequently. After the third examination (11.15 P.M.) the hemorrhage increased markedly. During the examinations the patient always complained of pain, so that they could not be made as thorough as they should have been. At 1.00 A.M. it was decided to anesthetize the patient in order to make a more complete examination. Chloroform was used. The case was now found to be one of placenta previa. The placenta was high enough up to be beyond the reach of the examining fingers, until after the anesthetic was given. The edge of the placenta was then felt to the right, anteriorly. The membranes were ruptured artificially and rapid delivery begun. When the membranes were ruptured the cord was found to be prolapsed. Delivery was effected by traction on the feet and legs.

Birth at 1.30 A.M. Child was still-born, but vigorous efforts were made to resuscitate it. These were partially successful. The child died two hours after birth. It was well formed. Its weight was 3 lb. 11 oz. While I was

working with the child, my colleague, Dr. Robinson, took charge of the mother.

Placenta expressed (Crédé) at 1.32 A.M. Ergot, grt. xxv, by hypodermic injection was then administered to the patient. The weight of the placenta was 10½ oz. It was of an oval shape, thin and soft. One edge was very dark colored and contained a blood-clot which occupied about one-fourth of the placenta. The surface was studded with white infarcts.

The cord was 65 cm. in length. Its insertion was marginal. It was small near the placental end and gradually enlarged toward the fetal end. Near the fetal extremity it was distorted by large venous dilatations and near the middle there was quite a large nodule of Wharton's jelly.

Immediately after delivery the patient went into collapse. Her head was quickly lowered, hot water-bottles were placed about her and vigorous massage of the extremities and uterus was kept up. Hypodermic injections of brandy were given about every fifteen minutes until five doses had been given. Strychnin sulphate, ⅓ of a grain was also given hypodermically once every hour until three doses had been given. Inhalations of amyl nitrite were given at first, and later oxygen was administered until four gallons had been used. Several high enemas of hot salt solution were given and one enema of hot strong coffee. It was three hours from the time the collapse set in before the patient began to rally. At the end of this time the uterus began to show signs of contracting under the massage, and the patient complained of pain and nausea. A vaginal douche of hot mercuric bichlorid, 1 to 5000, was then given and the binder put on.

Her temperature at 8.45 P.M. was 99°, at 12.45 A.M., 98° and three and half hours after delivery 97.5° F. The pulse at this time was 120.

About eight hours after delivery the patient became restless, complained of pain in the abdomen and began to vomit. The vomiting continued for about thirty-six hours. Nothing seemed to relieve it. During this time hot milk ⅔ viii was given per rectum, every six hours. The pain in the abdomen was relieved only by permitting the patient to lie upon her right side.

During the first twenty-four hours a small amount of urine was passed but urination was always accompanied by a bowel movement. Thus what urine was passed was so mixed with fecal matter that it could not be examined. At the end of the first twenty-four hours the patient was catheterized but no urine obtained. It was not until the fourth day that a specimen for examination could be obtained. This was by catheter and amounted only to 3 iii. It was acid in reaction. The specific gravity was not obtained. The heat and nitric-acid test showed it to be almost solid with albumin. Urea, by the Doremus test, was .03. By the microscope there was shown epithelium, pus, bacteria, and urates. No casts were found.

The patient's condition became gradually worse and death ensued on the fifth day. During the last twenty-four hours she became comatose. Her breathing became stertorous and of the Cheyne-Stokes type. The skin became dry and harsh and minute crystals of urea

¹ Read before the Nebraska State Medical Society.

could be seen glistening upon it. With this condition there was present a very peculiar odor.

The cause of death was uremia consequent upon nephritis with almost complete suppression of urine. Whether this nephritis was ante-partum or acute post-partum it is not possible to say positively since no autopsy was made and there was no examination of the urine before labor set in. The previous anemic condition of the patient, together with the hemorrhage during labor, were factors which contributed largely to the disastrous result. The chloroform anesthesia may have been another factor of considerable importance.

I have said nothing of the treatment pursued in the case after the first signs of uremia. In passing I will state that the usual recognized methods of treatment were followed: hot baths and hot packs, hypodermic medication to sustain the strength and induce perspiration, and finally intravenous injections of normal salt solution.

What would have been the result in this case if the labor had been conducted differently? The question hinges upon a point in obstetrical teaching—spontaneous rupture of the membranes or their artificial rupture, early or late. For the most part I received my obstetrical training under the "immortal" Jaggard. One of his dogmas was that the bag of membranes, being a natural dilator not only of the os uteri but of the whole parturient canal, should be left alone and allowed to rupture spontaneously, unless there were some very positive indications for interference. Just here it may be urged that those indications were present in the continued hemorrhage. In reply to this it can be said that the hemorrhage, although continuous, was only slight, not so much as often accompanies the slight lacerations of the cervix in process of dilatation. There was no history of hemorrhages before labor. On account of the hypersensitive condition of the parturient canal and the apparent high position of the placenta the true state of affairs could not be determined until after complete anesthesia. It was not until then that the case was determined to be one of placenta previa.

One of my colleagues in the hospital, Dr. Mord, in accordance with the training that he had received, practised the rupture of the membranes as soon as the cervix was completely dilated. In this case, it has seemed to me, that if I had ruptured the membranes at 8.45 P.M., at the time when dilatation was found to be complete and only one hour after the beginning of labor, the final result would have been quite different; both mother and child might have been saved. The child probably would not have been asphyxiated. There would have been saved to the mother at least four hours when her strength was slowly ebbing away, while the subsequent uremia might have been averted.

I report this case not alone because of the extreme interest that it has had for me, but that it may serve to warn others to be on their guard for even the slightest danger signal.

I am well aware of the fact that the conduct of the case may be severely criticised. It was partially with the purpose of eliciting this criticism that I have presented it somewhat in detail.

MEDICAL PROGRESS.

Maternal Impressions.—OGLE (*Charlotte Med. Jour.*, May, 1899) and LANDAU (*Monats. f. Geburts. u. Gynäk.*, May, 1899) discuss the philosophy of this puzzling subject. Both cite numerous well-authenticated instances in which the birthmark or deformity of the child suggests more or less some fright or accident which occurred to the mother during her pregnancy. Both admit that it is difficult to explain the very widespread belief in maternal impressions which has existed from the earliest times in every country. Ogle says that it is hard to imagine how a mental impression of the mother can affect the development of a portion of the child, in the absence of any direct nerve connection between the two, but he apparently hesitates to set down as pure superstition or error of observation all the recorded cases of maternal impressions from Aristotle to the present time. Landau is more outspoken, for in the closing words of his article, he says, "I admit that it is striking that earnest thinkers of great power of observation, wide learning, and sharp intellect, bring forward certain cases which seem to uphold the primitive belief. Still, great men have made mistakes before now. Maternal impression is and remains a superstition, and despite Welsenburg's highly instructive work on the subject it has not become worthy of scientific recognition."

Radical Cure of "Slipped" Hernia of the Large Intestine.—FROELICH (*Gaz. Heb. de Med. et de Chir.*, April 25, 1899) discusses the radical cure of those herniæ of the large intestine, either cecal or sigmoidal, which have "slipped" down behind the peritoneum, and are therefore partially or wholly without a peritoneal sac. This condition has been most perplexing to surgeons, and most operations on strangulated herniæ of this type have been followed by the death of the patient, while the operations done for radical cure when no strangulation existed, have been unsuccessful in curing the hernia. The author reports three such cases, in two of which attempts to separate the intestine together with the sac, from the tissues about the ring, in order to reduce the hernia *en masse*, were followed by fecal fistulæ. All three patients recovered, but without cure of the hernia. From a study of these and twenty-one published cases, Froelich concludes that in irreducible inguinal hernia one ought always to keep these "slipped" hernia in mind. The diagnostic points are the presence of fecal lumps, distention when gas is pumped into the rectum, a drawing feeling at stool, and often a diminution in the size of the hernia after evacuation of the bowels, and an irreducible hernia from the beginning. In regard to the treatment, it is advised to dissect sac and intestine posteriorly with the fingers high enough up to permit of the easy closure of the ring. Failing in this, the intestine should be resected. Even then one must not expect to obtain a radical cure, but the condition ought to be such that the hernia can be held in place by a truss. In strangulated herniæ of this type, the surgeon should remember that there may be loops of small intestine which

are also strangulated, and which must be freed and reduced if recovery is to be secured.

Error of Sex as a Ground for Divorce. — NEUGEBAUER (*Centralbl. f. Gynäk.*, May 6, 1899) has collected reports of no less than fifty cases in which divorce has been granted on account of an error in the sex of one of the contracting parties. It seems incredible that such a mistake should occur so often, but the conformation of the genitals of some of these hermaphrodites was such as to deceive medical men who could not in some instances agree upon the sex of the individual, even after an examination. One remarkable case is recorded in which a male hermaphrodite had successively three husbands, and it was only after she, or rather he, had given a venereal disease to the third husband that the latter applied for a divorce. In forty-six out of the fifty recorded cases a man had married a male hermaphrodite. In one case the sex of the parties is not given, and in three instances women married female hermaphrodites. In one of these instances the supposed husband later became pregnant, and was delivered of a full-term child. There are numerous instances in which a matrimonial engagement has been broken on account of the discovery that the parties to the agreement were of the same sex.

Repeated Cæsarian Section. — POLLAK (*Centralbl. f. Gynäk.*, April 15, 1899) looked up the literature of Cæsarian section and found that it had been performed a second time upon the same patient no less than thirty times. A still more remarkable fact is that in twelve cases it has been performed three times upon the same patient, the operation being twice concluded by the removal of the uterus. Four women have had Cæsarian section performed upon them four successive times, while one, a patient of Birnbaum, was five times subjected to this operation, this unique series of deliveries being terminated unfortunately by the death of the mother from pulmonary embolism. Pollak adds the details of a case in which Cæsarian section was three times performed. The last operation was done by himself, and a careful examination of the uterus showed that its wall at the sites of the previous incisions was as solid and as thick as at other places.

In this connection may be mentioned a case reported by Pryor in which Cæsarian section was successfully performed upon a woman whose abdomen had been opened five years previously for the removal of a large fibroid. At the time the uterus was opened, another fibroid was present, but it was decided not to remove the tumor. It grew so rapidly, however, that laparotomy had to be performed within three months, at which time the whole uterus was successfully removed.

THERAPEUTIC NOTES.

Treatment of Acute Rheumatism Prophylactic of Pericarditis. — DELEARDE (*La Presse Méd.*, April 29, 1899) says that no other drug is so good as salicylate of soda to prevent pericarditic sequelæ after acute articular rheumatism. Three rules are to be observed, *viz.*, to give large initial

doses of the salicylate, to give it at short intervals on account of its rapid elimination, and to keep up its administration for at least ten days after the disappearance of all pain. To adults he gives from 90 to 120 grains a day in the beginning of the attack, in divided doses, every three or four hours. After the disappearance of acute symptoms the dose is reduced so that the patient gets only 45 to 60 grains a day. The medicine is given either in capsules or in such a mixture as the following:

℞ Sodii salicylatis 3 jss
Spiritus vini rectificati 3 ijs
Syr. ribis 3 x
Aquæ destillatæ q s. ad ʒ iij.

M. Sig. Take the whole in doses of a tablespoonful during the twenty-four hours.

Treatment of Impetigo Contagiosa. — The crusts are to be removed by repeated washings with warm water and soap (STELWAGON, "Keating's Cyclopedic," vol. v.) and an ointment of ammoniated mercury of the strength of from 10 to 20 grains to the ounce. In cases in which the itching is severe a lotion composed of a saturated solution of boric acid, containing ½ a dram of carbolic acid or resorcin to the pint, should be applied. This prevents inoculation of new points.

Treatment of Acute Dysentery. — SODRÉ ("Twentieth Century," vol. xvi) recommends in lieu of the large doses of infusion of ipecac often given the following:

℞ Pulv. ipecac. gr. iss
Pulv. opii gr. ⅓
Calomel gr. ¼.

To be given in a capsule every two hours, or administered about fifteen minutes before the first dose of ipecac, 12 drops of a mixture containing menthol (gr. iij), tinct. opii (gr. iss), and Jamaica rum (3 v), and apply a mustard plaster to the epigastrium. If the ipecac is not tolerated saline cathartics should be given in small doses, often in alternation with the ipecac. The salines—sulphates of sodium or magnesium in doses of about 2 drams—are indicated when there is constipation, or small evacuations with much colic and tenesmus. Astringents—opium, bismuth, and salol—are useful, but must be given cautiously and alternated with the saline cathartics. Ulceration in the rectum and colon is to be treated by enemata, containing opium and bismuth. The following plan of treatment is very often satisfactory: Sulphate of soda (or magnesia) is given on the first day of the disease, and on the second, third, and fourth days, every three hours, a capsule containing:

Magnesia gr. iv
Bismuth subnitrate gr. vi
Pulv. ipecac gr. i
Pulv. opii gr. ⅓.

For Acute Diarrhea.—

℞ Sodii bicarbonatis 3 i
Spts. ammonii arom. 3 iij
Tinct. cardamomi comp. 3 vi
Aq. cinnamomi q s. ad ʒ vi.

M. Sig. Two tablespoonfuls every two or three hours. — Yeo.

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SATURDAY, JULY 15, 1899.

THE TREATMENT OF SUMMER DIARRHEA IN INFANTS.

WE are glad to be able to present to our readers, just at the time when its very practical points may be of most service to them, Dr. Chapin's paper on this timely subject, with a detailed report of the discussion that followed it at the New York Academy of Medicine at its last meeting of the season. There is nothing that is absolutely new to be said on the subject, but the emphasis laid on certain points in the course of the discussion shows that physicians who have a very large experience in children's diseases are now definitely agreed as to the advisability of certain measures that have been more or less in doubt though every year growing more and more into the practice of the profession.

The theory that children should not be given carbohydrates because they secrete no diastatic ferment to digest them is now definitely abandoned and two distinct advantages are claimed for the mixture of carbohydrates with baby's milk. First, there is the mechanical separation of the particles of the coagulated milk which prevents its coagula-

tion in thick solid masses incapable of penetration and digestion by the stomach juices; and second, certain antiputrefactive action is claimed for carbohydrates. Their fermentation which used to be so much dreaded or at least railed about, it is now urged, causes the liberation of free acids and these prevent the growth of intestinal bacteria which especially luxuriate in an alkaline medium. When cow's milk is used, then, in the feeding of infants in the summer time especially, its dilution with barley-water or some other cereal solution is considered much more to be preferred to its dilution with plain water.

As to treatment all the specialists in children's diseases insist on the stoppage of all feeding just as soon as diarrhea asserts itself in the hot weather. There is great danger in delaying the institution of this radical measure while an over-anxiety that would stop the administration of milk, and so perhaps anticipate the necessity for absolute gastro-intestinal rest by a few hours, can do very little if any harm. A single attack of vomiting in a child whose stools are more frequent and watery than normal must be the signal for the withdrawal of all milk from the dietary if the physician would not neglect his plain duty as outlined by the best recent experience.

As to drugs, not much can be said. All authorities are agreed that opium must not be used, in the hope to control by its help the number of stools. It must never form part of the diarrhea mixture itself of which the main ingredient should be one of the salts of bismuth; it must not be administered until after stomach and intestines have been relieved by purgation, lavage, and high injections of any toxic material that is present. It must be employed only when there are direct indications for it, *i. e.*, only when there is exhausting restlessness or tenesmus and pain. For the restlessness it has been pointed out that hydrotherapy forms an excellent substitute for opium and one that carries with it none of the dangers of the rather treacherous drug. Whenever the temperature of the little patient is above 102.5° F. for any length of time it should be placed in a bath somewhat above 90°, which should be rapidly lowered to about 80°, not lower. As a rule not more than a very few minutes will be necessary, but the bath may be continued for ten minutes, a cold cloth

being kept on the child's head. For tenesmus the local use of opium per rectum is most advisable, 2 or 3 drops of the tincture in a tablespoonful of starch water relieving the pain, decreasing the fruitless efforts at stool, and avoiding most of the deleterious effects of the drug on the general system.

Abroad, of very late years a good deal has been said of the value of tannigen in controlling the stools. Dr. Blackader of Montreal, in the March number of "Progressive Medicine" in an excellent review of the recent literature on summer diarrheas; quotes no less an authority than Escherich, the well-known Professor of Children's Diseases at the University of Graz in Austria, who speaks very favorably of tannigen and claims for it a distinct disinfectant and bactericidal effect. Kraus and Biedert have also written in its praise, especially for chronic intestinal catarrh. It is a tasteless powder, therefore easily administered and is given in doses of 2 to 5 grains four times a day. It is especially useful in cases of follicular enteritis, where local measures are of little avail. Its administration is continued in lessened doses after the acute symptoms have subsided and it is said to hasten convalescence, which is often apt to be tedious.

Stimulants used early in the case, though sparingly until marked signs of prostration assert themselves, are growing in favor. Recent reliable physiological observations, notably Atwater's work, seem to confirm an old view with regard to alcohol, that it is oxidized in the body and does replace food material to a very appreciable extent. When all milk feeding is stopped it undoubtedly serves to keep up the child's strength. Bouillon has been recommended for the same purpose. Meat-products generally, while acting as effective nutrients do not seem to furnish the favorable culture-medium for micro-organisms that milk does.

For the severe states of depression that develop in the serious cases of diarrhea the subcutaneous injection of normal salt solution has sometimes given excellent results. Very often these cases are hopeless. The paralysis of cellular activity has been too great to permit reaction. The normal salt solution seems, however, in many cases to dilute the toxins in the circulation and arouse conservative processes that make for resistive vitality. In an infant an ounce of the solution may be injected into the thigh

or back by means of a hypodermic needle or an ordinary Davidson syringe and will often be followed by a most favorable reaction. The injections may be repeated about three times a day. Even in what seems hopeless collapse the effect is often according to French writers almost marvelous.

RECENT EPIDEMICS OF CEREBROSPINAL MENINGITIS.

THERE is still much to be learned about epidemic cerebrospinal meningitis, and Europe looks to America for this information, as the disease is rarer in the Old World than in the new. Class, a member of the Health Department of Chicago, made a special study of the cases occurring in the recent epidemic in that city, and gives in the *Journal of the American Medical Association*, a summary of the histories of thirty-eight patients. The mortality of these patients was 65 per cent.; but he believes that a complete record of all the cases which occurred in the city during the epidemic would show a much lower mortality, since the thirty-eight reported by him were chiefly those of hospital practice.

Since those in attendance upon the sick almost never take the disease, and since an epidemic does not spread by contiguity as does smallpox or yellow fever for instance, the contagiousness of the disease has been generally denied. There are, however, instances in which several members of one household are victims, a number of such being seen in the Chicago epidemic, and the majority of all the cases occurred in a territory of about one square mile. Class believes that the disease is contagious like phthisis, which would explain its spread geographically in congested districts inhabited by persons of careless habits, and the lack of a similar spread among the intelligent and well-to-do. Several pathologists have shown that the germ exists in the buccal and nasal mucus. As the germ is short-lived, it is easily understood why a family moving into rooms previously occupied by a patient, probably would not contract the disease. An examination of the dwellings inhabited by those who fell ill during this epidemic showed that many of them were in a very bad sanitary condition. The records of previous epidemics in other places are in accord with this statement. Hence, Class advocates the isolation of patients and the disinfection of their

evacuations, the correction of sanitary defects, and the notification of the sanitary authorities. Nothing new was brought out in the way of treatment. The writer mentions that difficulty in swallowing was observed in six cases each of which terminated fatally.

Two other recent epidemics of this disease are reported. One was in the vicinity of Morgantown, Kentucky, where fourteen patients, almost all of them males, died in from one to eleven days, (only two lived more than three days) while two were in critical condition at the time of report, and three or four others had recovered after a slight illness, the diagnosis of meningitis in their case being doubtful. The other epidemic was in the vicinity of Henderson, Kentucky. Quinn, who reports the latter, estimated that one hundred persons were attacked, of whom about seventy-five died. In the midst of this epidemic, not a doctor or nurse suffered; but in adjoining counties where there were only a few cases, two doctors lost their lives from the disease.

NEW INSTRUMENTS AND THE "DICHOTOMOUS" METHOD IN MEDICAL ADVERTISING.

A DISTINGUISHED French surgeon, not long deceased, is said to have owed not a little of the very large and lucrative practice that he enjoyed to his uncompromising belief in the practical application of the botanical principle of dichotomy, equal division, in the matter of consultation cases. His facetious countrymen have taken the word which is applied by botanists to plants that multiply by division and applied it to medical men whose monetary accretions follow a similar law. They call them dichotomous, and have thereby enriched medical literature and language with a very expressive term.

It is not unusual to have this system of "divvying up" referred to abroad as typically American. That it is not exclusively so the little legend we have just related and the very apt appropriate term the French have invented for what is evidently not an isolated incident, seem to show. A circular that has been going the rounds of doctors' offices here in New York, and very probably elsewhere in the country, indicates that there are other countries in Europe outside of France where the principle of division of the spoils is not unknown. At least it is

scarcely to be supposed that the very promising system of division suggested in the circular sprang fully panoplied for the American campaign from the fertile brain of the American agents.

The circular in question which smacks somewhat of its foreign origin in the construction of its phrases offers to physicians a goodly share of the spoils (\$25 to \$50) for every patient that on the physician's recommendation adopts the company's inventions for the removal of impotence. These inventions have the approval of high authorities abroad (names given), and cost \$150 to \$200. There have been grave doubts expressed abroad as to the advisability of the use of such methods, except in selected cases under extraordinary circumstances, but with that we are not concerned. The method adopted for introducing the instruments deserves the severest censure and should keep physicians, who value their reputations for honorable dealing with their patients, from advising them until such methods are abandoned.

Manufacturers and agents must be taught the lesson that what is gained by these objectionable advertising methods with certain classes of the profession injure them so much with the great body of self-respecting medical men that their use does not pay in the end. Only this practical commercial argument will reach such people. The methods in question are unfortunately becoming contagious in various trades connected with medicine, and this last extravagant manifestation should receive a severe rebuke.

MEDICAL MATTERS IN NEW YORK.

OPTICIANS AND PHYSICIANS—A ROBBER OF DOCTORS' OFFICES CAUGHT—ST. JOHN'S GUILD—FATAL ERROR IN DIAGNOSIS—THE HIGH-PRESSURE SYSTEM IN NEW YORK SCHOOLS—TENEMENT-HOUSE REFORM—YELLOW FEVER IN NEW YORK HARBOR.

THE New York State Optical Society, at its meeting at the Fifth Avenue Hotel on June 27th, adopted a resolution deploring the action of certain medical societies of other States in endeavoring to disrupt the hitherto cordial relations which have existed between physicians and opticians.

In arresting one George Freeman the Brooklyn police seem to have caught an old offender, whose particular "lay" has been to call and ask for "the doctor" in his absence, be received in the waiting-room, and then to quickly disappear a few minutes after being left alone with whatever property he could conveniently carry off. On one occasion Freeman was seen by the doctor's

servant to leave the house with a bundle. She ran after him, and accused him of theft. He then handed her two coats and an umbrella belonging to her employer, said he had made a mistake, and hurried away.

The "Helen C. Juilliard," the new floating hospital of St. John's Guild, made its initial trip on July 6th. This boat has accommodation for 1900 persons. Her most conspicuous feature from a hygienic point of view is the bath-rooms, in which forty-one people can take salt-water spray baths simultaneously. Patients who are found to need longer treatment than can be given in a day's outing on the boat are carried to the Seaside Hospital of the Guild, at New Dorp, Staten Island. This establishment is governed by a board of ten New York and two resident physicians.

A few days since a man was stabbed in the abdomen during a quarrel. His assailant had used a pocket-knife. The wounded man went to a hospital near by, where his wound was examined. The surgeon considered it only a superficial wound, dressed it, and sent the man home. That night symptoms of peritonitis developed, and next day the wounded man was taken to Bellevue, where it was discovered that the abdomen had been penetrated. The man died.

Dr. W. Gill Wylie, chairman of the Medical Board of the Board of Education, has begun an agitation for a reform of the present school system as it applies to girls. He considers that girls between the ages of eleven and sixteen are required to do too much work. A point gained thus far is that the age now fixed for admission to the Normal School is fifteen, instead of fourteen, as it used to be. Dr. Wylie says: "The danger resulting from the amount of study required at present is not to the life of the girl, but, coming as it does in the formative period of a girl's life, the evil effects are bound to be manifest in her children."

The tenement-house committee of the Charity Organization Society has prepared a series of ordinances relating to tenement-house construction, and has presented them, in a report, to the Municipal Building Commission. It was observed that New York City's tenements are a disgrace to the city and the State, that dangerous and unsanitary conditions are allowed to prevail in them, and that these conditions are growing steadily worse year by year. One of the suggested ordinances is aimed at the dark, narrow, and unventilated air-shaft, and the resulting dark, damp, and unventilated rooms that open upon it, and provides that the shafts shall not be less than six feet wide in any part and have not less than 150 square feet in superficial area. Other provisions are that no tenement shall be more than six stories high, that living rooms shall each have 600 cubic feet of air space, that there shall be at least one bath-room for every twenty families in every tenement, and that the walls of tenements shall be carried three and one-half feet above the roof, so that the roof may be used as a playground.

The Government Transport "McClellan" from Santiago, Cuba, arrived at quarantine, July 6th, with two well-developed cases of yellow fever and two suspicious

cases on board. The suspects did not develop the disease, and have been discharged. One of the persons in whom the disease developed was Miss L. C. Clendenin, daughter of Surgeon-Major Clendenin, who died of yellow fever at Santiago the day following the departure of the "McClellan." The attack is mild in her case and she is being cared for at the quarantine hospital. The other case proved more serious and the patient submitted to treatment with the serum developed by Dr. Doty, Health Officer of the port. This serum is produced from the Sanarelli bacillus by injecting cultures directly into the veins of a horse. By this process Dr. Doty believes that a stronger antitoxin is developed than by the subcutaneous method. He has despatched Dr. Bernard E. Baker of Charleston, South Carolina, with a supply of serum to Vera Cruz, Mexico, to give the remedy a prompt and thorough test. The epidemic of yellow fever which is raging there will enable him to use it in the early stage of the disease when it should be the most efficacious. To Mr. Lackey, the patient in the quarantine hospital, a subcutaneous injection of the serum was given at eleven o'clock, two o'clock, and seven o'clock. During this time the patient's temperature fell two degrees and his general symptoms improved.

ECHOES AND NEWS.

Vienna Losing Its Lead as a Medical Center.—In the winter semester there were 1382 medical matriculants at Vienna, 1341 at Munich, and 1311 at Berlin. Wurzburg stands next in the list with 713, while the once popular Heidelberg had only 240.

A Beer Tablet.—The latest reported German invention is a "beer tablet." The beverage is dried and compressed, and when water is added to the tablet, carbonic acid gas is formed, so that a foaming beaker is produced, as good, it is said, as if it were freshly drawn from the barrel. It is non-alcoholic of course.

A Congress of Deaf-Mutes.—A committee of the leading deaf-mutes of Paris is making arrangements for an international congress at the Exposition in 1900 and has asked the four following Americans to act as a sub-committee: The Rev. A. W. Mann of the Central Western Deaf-Mute Mission of Gambier, Ohio, the Rev. J. M. Koehler, rector of All Soul's Church, Philadelphia, Professor T. F. Fox of the Fanwood Institution, Washington Heights, and E. A. Hodson, editor of *The Deaf-Mutes' Journal*.

Medicine's New Field.—Professor Charles Sedgwick Minot of the Harvard Medical School delivered the annual address to the Yale Medical seniors on June 27th. He said: "We are brought to the conclusion that though the primary functions of our medical schools is to educate practitioners of medicine, yet they ought to assume now the further and higher function of training medical investigators. The requirements of comparative medicine call for more changes than we have yet mentioned. The very word comparative implies that animals shall be included in the study."

Koplik's Spots in Prague.—Dr. Ludwig Knospel, the assistant of Professor Ganghofner in the clinic for children's diseases at the German University of Prague, has followed carefully all the numerous cases of measles that came to the clinic and has found Koplik's spots of the greatest value for the early diagnosis of the disease. He reports that he has noticed the red spots with bluish-white punctations on the mucous membrane of the cheeks and lips from three to five days before the appearance of the usual eruptions of measles. (*Schmidt's Jahrbucher* for June, from the *Prager Medicinische Wochenschrift*.)

Decreased Death-Rate.—The mortality bulletin of the New York State Board of Health for the month of May says that the number of deaths reported was 9556, or just the average for the ten years past. It is 200 less than that of May, 1898, and 850 less than that of the preceding month, the average daily mortality having been reduced from 346 to 308. For the preceding four months the average daily mortality was 370. The death-rate is reduced from 17.75 to 16.00. The decrease from last month is in acute respiratory diseases, from which there were 500 fewer deaths, and other local diseases caused 300 fewer deaths.

Report of Plague at Paris Denied.—The rumors that there have been deaths from the plague in Paris have been so persistently circulated that the matter was brought before the Academy of Medicine for investigation. The Academy has determined that the rumors were absolutely without foundation, other than an anonymous letter written to an official of the government, stating that five employees of the large department-store, Bon Marché, had died from plague contracted from handling rugs. The police at once took the matter up, and ascertained that there had been no deaths among the employees nor any cases of severe illness. The sanitary conditions in the store were found to be as nearly perfect as possible.

The Progress of the Plague.—Reports from Japan announce that the plague still remains limited to the island of Formosa. At Bombay, Calcutta, and other towns in the Bombay Presidency, the disease seems to be declining. At Alexandria, Egypt, the total number of cases occurring previous to June 16th was thirty-two, with ten deaths. Eight of these were of Europeans. A quarantine of six-days' detention has been declared at Naples on all ships having touched at Egyptian ports, and the importation of goods from all infected countries has been practically stopped. Turkey has established a ten-days' quarantine against vessels from Egyptian ports, Greece eleven-days' quarantine, and Malta two-days' quarantine. No further news has been received regarding the appearance of the plague at San Francisco.

Epidemic of Diphtheria in the State Hospital for the Insane at Willard.—Diphtheria was reported July 5th as epidemic among the 2300 patients and 600 employees at the State Hospital for the Insane at Willard, near Geneva, N. Y. The hospital has been placed under a rigid quarantine. There are now seventeen cases at the institution. It first

appeared at the institution about a month ago, but the patients were quickly isolated. They recovered, and it was believed the disease had been stamped out. There was a further outbreak last week, and it is this which has alarmed the authorities. The disease is of a very mild type, and attacks the younger persons. Of the seventeen now under treatment fourteen are employees. The disease is being kept under control by the free use of antitoxin and no deaths have thus far been reported.

The Study of Cancer at the Buffalo Laboratory.—The careful investigations into the etiology of cancer being carried on at the State expense at the Buffalo (New York) Laboratory are attracting attention abroad. It is reported that the British Cancer Society of London has appointed Dr. A. L. E. Duffy to investigate the work being done at Buffalo and collect data bearing upon the spread of the disease in the United States. As intimated by Dr. Roswell Park in his article published in the *MEDICAL NEWS* April 1, 1899, the investigations at the Buffalo Laboratory point strongly toward confirmation of the germ theory of the disease. On the other hand Dr. Lambert Lack of London has recently reiterated positively his belief, founded on late investigation, in the old theory that cancer is originally a local disease due to a specific injury to the basement membrane of mucous surfaces and allied structures. He also announces the discovery of a prophylactic and curative serum.

Experiments in the Eradication of Malaria.—Major Donald Ross, I.M.S., well known for his researches on the connection between the mosquito and malaria, will head a deputation of observers from the new tropical medicine department of University College, Liverpool, which will go to Sierra Leone in August. They will be in Africa during the period of greatest prevalence of malaria and when the conditions are most favorable for observations on the disease and especially as to the means by which it is spread. Major Ross considers that he will be able to demonstrate to the members of the expedition the truth of his theory that malaria is carried about by a certain species of mosquitoes and is directly caused by their bites. The special purpose of the expedition will be to determine what species of mosquitoes are malaria-bearers in a given region and then having found their haunts in swamps or ponds to cover them up and see if they will not be able to prevent in this way the further distribution of the disease. As this is the first practical attempt of this kind for the eradication of malaria, the outcome will be watched with great interest by the whole of the medical world.

The British Medical Association.—The sixty-seventh annual meeting will be held at Portsmouth August, 1, 2, 3, and 4, 1899. The president-elect is Dr. John Ward Cousins. The following are the subjects announced for discussion in the several sections: "The Medical Tests Required at Present for Admission to the Public Services," "The Prevention and Remedial Treatment of Tuberculosis." Surgery: "The Diagnosis and Treatment of

Gunshot Wounds of the Abdomen," "The Prevention and Treatment of Syphilis in the Navy and Army." Obstetrics and Gynecology: "The Treatment of Fever Following Delivery, with Special Reference to Serum-therapy," "The Natural Menopause Compared with (a) the Menopause Produced by Removal of the Uterine Appendages, and, (b) the Menopause Produced by Removal of the Uterus without Removal of the Appendages." Tropical Diseases: "Psilosis or Sprue; Its Relations (Etiological and Pathological) to Other Forms of Tropical Diarrhea, and Its Treatment," "On Thermic Fever (so-called Siriasis), with Special Reference to Its Alleged Microbic Causation," "The Agency of Insects in Spreading Infections."

Yellow Fever in Cuba.—Since July 4th, the date of our last report, yellow fever has continued to claim its victims among the members of the various garrisons. At Santiago Surgeon-Major Clendenin has died of the disease, also Chief Commissary-Major Heatwole and Signal Officer McLaughlin. At Manzanillo two new cases were reported July 7th, and on the same date two deaths from the disease at Puerto Principe. At Santiago the troops have been placed in camps on the hills and are frequently moved; most careful hygienic and sanitary precautions have been instituted. Elevation seems to have little effect upon the disease. Regarding the appearance of yellow fever in the hills, General Brooke has telegraphed as follows to the War Department: "In 1868-1878 Board of Health, Santiago, reported yellow fever 1000 feet above sea-level; in Mexico, Cordova, 2962, at Las Aurinas, 3308. New Castle, Jamaica, 4200 feet, has been visited several times, and several places in Peruvian Andes, 4000 feet, have been afflicted with it. Everything is being done that can be to control the disease." Commenting on this fresh outbreak in Cuba, General Sternberg says that it was not unexpected by the War Department. "Cuba is an infected island and this is the yellow-fever period."

Medical Officers Selected for the Philippines.—The President has completed the selection of the medical officers to serve with the regiments of volunteer infantry to be organized for service in the Philippines. These appointments, together with the former service of the appointees, are as follows: *Surgeons, with Rank of Major.*—Ogden Rafferty, Captain and Assistant Surgeon, United States Army, late Brigade Surgeon Volunteers; Charles P. Mason, Captain and Assistant Surgeon, United States Army, late Brigade Surgeon Volunteers; John R. McDill, late Brigade Surgeon Volunteers, now Acting Assistant Surgeon, United States Army; Frank C. Armstrong, late Surgeon Twenty-first Kansas Volunteers; Thomas W. Chalmers, late Surgeon Twelfth New York Volunteers; Charles L. G. Anderson, late Assistant Surgeon, United States Army, now Acting Assistant Surgeon, United States Army; D. Albert Lieberman, late Surgeon Sixth Missouri Volunteers; Joseph N. Henry, late Surgeon Fourth United States Volunteer Infantry. *Assistant Surgeons, with Rank of Captain.*—John R. Hereford, late Surgeon First Missouri Volunteers;

James C. Miner, late Surgeon First Arkansas Volunteers; Frank W. Foxworthy, late Assistant Surgeon One Hundred and Sixtieth Indiana Volunteers; Abram L. Haines, late Surgeon Two Hundred and Third New York Volunteers; James J. Ewin, late Assistant Surgeon Tenth Ohio Volunteers; W. E. Parker, late Acting Assistant Surgeon, United States Army; James E. Shellenberger, late Surgeon Third Ohio Volunteers. *Assistant Surgeons, with Rank of First Lieutenant.*—William H. Cook, Acting Assistant Surgeon, United States Army; Lomax S. Anderson, late Assistant Surgeon Fifth United States Volunteer Infantry; Leonard K. Graves, late Assistant Surgeon Two Hundred and First New York Volunteers; Ralph S. Porter, late Assistant Surgeon Second Illinois Volunteers; John A. Metzger, Acting Assistant Surgeon, United States Army; Patrick J. McKenna, late Assistant Surgeon Second United States Engineers; Albert H. Aber, late Assistant Surgeon Thirty-fifth Michigan Volunteers; John E. Boyd, late Captain Second South Carolina Volunteers.

CORRESPONDENCE.

OUR PHILADELPHIA LETTER.

[From Our Special Correspondent.]

LEGAL STEPS TO BE TAKEN AGAINST THE CHRISTIAN SCIENTISTS—INJURIES DUE TO THE FOURTH OF JULY—STATE BOARD EXAMINATIONS—CHILDREN'S HOSPITAL—PERSONAL—HEALTH NOTES.

PHILADELPHIA, July 10, 1899.

IT is an encouraging sign of the times to note that in both New York City and Philadelphia popular feeling against Christian-Science "healers" has been aroused to such a point of antagonism by the recent manipulations of this sect, that in the near future radical legal measures will probably be enacted to wholly suppress this menace to health and life. The half-dozen deaths which have occurred during the past three weeks, in different parts of this country, as the result of Christian-Science "treatment," have opened the eyes of the public to the enormity of this delusion, and have stimulated the medical profession to definite action along legal lines to suppress the evil. The lay press is doing a good work, at least here in the East, in exposing the fraudulent methods employed by these parasites of Christian profession, and the more the public learns of their widespread rascality just so much easier it will be to secure legislative support for laws aimed at the abolition of the practice of the Christian-Science fad. But the educational aid of the newspapers must be augmented by prompt and vigorous action by representative medical organizations before successful litigation may be hoped for. County, State, and national societies must take action singly and with combined forces. In Pennsylvania the laws of the Commonwealth seem to be adequate to justify immediate prosecutions, but in order to make haste slowly and to make sure of no unexpected abortion of plans, Dr. Henry Beates, in his official capacity as president of the State

Board of Medical Examiners, before taking legal steps in the matter, has requested the Attorney-General of the State to render an opinion as to the precise legal interpretation of the act for the regulation of medical practice as applied to Christian Scientists.

If, in the opinion of the Attorney-General, this sect may with impunity continue to evade the spirit of the law, although keeping strictly within the letter, another law will be agitated to absolutely prohibit their practices; if, on the other hand, his opinion is adverse to the Christian Scientists, immediate steps will be taken, both by civil injunction and by criminal prosecution. Dr. Beates' initiatory steps in this matter are being watched with a good deal of interest by the medical profession, and it is hoped that at last the exact status of Christian Science will be determined, and that drastic measures may be confidently resorted to for its suppression.

Philadelphia's contribution of accidents due to the prevailing manner of celebrating the Fourth of July places her high up in the list of cities where patriotism seems to be measured by maiming and wounding and loss of life. Three hundred accident cases, caused by fireworks, were treated by the city hospitals on the Fourth, not to speak of the many other unreported cases, cared for at the homes of the celebrators, by private practitioners. Of course the Mayor issued a special proclamation prohibiting fireworks, but as long as his edict is not enforced by the police, but rather regarded with supreme contempt by authorities and public alike, these needless casualties on the Fourth will continue. In every part of the city preventable suffering occurred, not only among the would-be patriots, but indirectly among the bed-ridden and nervous and sick in houses. Altogether, the Fourth of July nowadays has degenerated into a primeval orgie of noise, incendiarism and slaughter.

At the recent State Board examinations for licenses to practise medicine in Pennsylvania, all the candidates of the Eclectic school, ten in number, qualified, while ten out of the forty-one candidates appearing before the Homeopathic Board failed, and must be reexamined next November, to obtain the necessary permission to practise. The returns of the regular examiners have not yet been completed.

A roof-garden has just been given to the Children's Hospital by the president of the institution, Dr. T. W. Wilson, as a memorial to his sister, Mrs. Elizabeth Lewis. The new structure will afford fresh, cool air for the patients independent of the condition of the weather, and has been erected at a cost of \$5000.

The total number of deaths in Philadelphia during the present week was 435, an increase of 15 over those of last week. Of the whole number of deaths, 189 occurred in children under five years of age. The returns of infectious diseases show 53 new cases of enteric fever, with 9 deaths; 50 new cases of diphtheria, with 11 deaths; 36 new cases of scarlet fever, with 1 death; and 4 new cases of cerebrospinal meningitis, with 3 deaths. The small-pox outbreak seems to have been entirely eradicated, no new cases having been reported here during the past seven days.

OUR LONDON LETTER.

[From Our Special Correspondent.]

LAWSON TAIT'S CAVE-BURIAL; CAUSE OF HIS DEATH; OTHER TRAITS—PROFESSOR SCHAEFER'S ELECTION AND LONDON'S LOSSES—MEDICAL REPRESENTATION IN THE SENATE AT LONDON UNIVERSITY—BRUSSELS MEDICAL GRADUATES IN LONDON—OSLER'S LECTURE—POLYCLINIC DINNER—THE "LANCET'S" APPRECIATION OF AMERICAN MEDICINE.

LONDON, July 3, 1899.

THAT great surgical genius, Lawson Tait, seems to have been determined to remain as eccentric in death as in life. A brief clause in his will directed that his body should be cremated and the urn containing his ashes placed in a niche in a beautiful cave in the grounds of his country-house in Wales, known as Gogarth Cave. Over the niche a simple slab is to be placed, bearing nothing but his name and age, and a short inscription to the effect that his life had been devoted to the attempt to save the medical profession from the shameful folly of animal experimentation and the delusion that the results so obtained were of any value in human medicine. It is extraordinary how many really great men seem to prefer to be remembered by their weaknesses, or even their follies, instead of by their real masterpieces. To think of a genius emblazoning upon his tombstone only the deeds for which he needs forgiveness—and oblivion! His other directions though equally unique, had a simple dignity about them which commands our respect and sympathy. No public gathering was to be held at his interment, or ceremonial of any kind, religious or otherwise, in fact only the members of his family were to know the date at which it occurred. These were observed to the letter. His body was taken to Liverpool by his brother-in-law and two executors, cremated, and the urn delivered to his widow, who, there being no issue, will alone and unaccompanied place it in the grotto, after such an interval as she judges best.

The cause of his death was renal calculus, probably causing a rupture of the ureter, as death came within twelve hours of the first symptom of trouble. He had had several attacks of renal colic, and two years ago an operation had been performed for the removal of a calculus from the urethra, so that, as his will clearly shows, the great surgeon was fully aware that serious complications might develop at any moment.

From his student days in his native Edinburgh to the very week of his death Lawson Tait loved fighting for its own sake, and when the "fog uv fightin'" was on him was perfectly reckless who or what he attacked, so that there was no need for him to study the gentle art of making enemies; they rose in swarms on every hand, but nearly all of them gave him credit for sincerity, bravery, and a remarkable dexterity with his weapons. And some of his most slashing attacks, as for instance, that upon the over-theoretical and over-scientific tendencies in modern medical education, with regrets for the departure of the old apprenticeship system, when at an association meeting at Birmingham, he advised his surgical brethren not to waste their time in the surgical exhibit but to ob-

serve and endeavor to imitate the dexterity of the Brummagem button-cutter, had a great deal of wholesome truth under their ferocity.

The chair of physiology in the University of Edinburgh has at last been filled by the election of Professor Schäfer of University College, London. This selection will meet with the unanimous approval of the entire medical profession, and considerable relief is expressed here as it was feared that the delay was due to some feeling in the board of electors in favor of a local candidate. It is, however, a far from creditable comment upon the absence of public spirit and the hand-to-mouth condition of affairs in both medical and university education in London that the metropolis of the world has lost within the past three months her leading pathologist, one of her best-known biologists, and her only distinguished physiologist to little Cambridge and poverty-stricken Edinburgh, simply because she is too stingy to pay them a decent salary. There is scarcely a chair of anatomy or physiology in London which has a respectable living attached to it. Most of them are in the antediluvian position of mere stepping-stones to surgery and practice of medicine. Only a week ago the "promotion" of a man who had begun to win a wide reputation as a scientific anatomist to the assistant lectureship in surgery was announced in the journals. That means, of course, the end of his prospects as a scientist, and the beginning of his degeneration into a mere operative-surgeon.

The composition of the senate of the proposed University of London has just been announced. Of its members 12 are to represent science, 10 the arts and literature, 6 medicine, while music, law, and theology have one each. Perhaps this may furnish at least the really great and adequately supported medical school which is so badly needed, but so intense is the conservatism, and so innumerable the petty jealousies and bickerings with which the scheme has to contend at every step, that it will be a matter of years or even decades before any actual teaching can be hoped for from it.

The annual dinner of the Brussels Medical Graduates' Association is announced for July 5th. It might at first sight appear strange that there should be a sufficient number of Belgian graduates in London to form an association, but the clue to the mystery is that the English degree of M.D. is so expensive and so outrageously difficult to procure that a large number of medical men go over to Brussels, where the coveted degree can be obtained by one-year's residence and study. There is a strong and growing desire here to resort to American medical colleges for this purpose.

The General Medical Council has published a brief but complete and continuous story of the Hunter persecution, in which it magnanimously forgives its victim and admits that its Penal committee may have been a trifle overzealous, but that nobody in particular was to blame, except, perhaps, poor Hunter himself, in placing his sign door-plate where the committee could see it when it happened to have its "fighting-socks" on.

The inaugural dinner of the London Polyclinic was a great success. Nearly 300 guests were present, repre-

senting the flower of English medicine, and the treasurer was able to announce at the close that the funds of the institution had reached the sum of nearly \$25,000 and that some 200 students and attenders had enrolled themselves for the first term. Sir John Lubbock was in the chair and speeches were made by Sir. William Broadbent, Sir Joseph Fayrer, Mr. Jonathan Hutchinson, Dr. William Ord, and others.

The event of the week attracting the widest interest was the Cavendish Lecture of Professor Osler of Baltimore, before the West London Medical Society. An audience of nearly 400 physicians attended and the lecture was published in full in the current number of both the *Lancet* and the *British Medical Journal*. A curious little incident occurred during the proposal of the customary vote of thanks, which much amused the Americans present. The mover of the vote was enumerating the various grounds for welcoming Dr. Osler, and claimed him first as a Canadian and fellow-subject of the Empire, which evoked a mild ripple of applause, then as a representative of "our brethren across the Atlantic, the great American medical profession," and the speaker had to wait until the applause subsided before he could go on.

The *Lancet* devotes a long editorial to a critical commendation of Dr. Wilson's address at Columbus. It regards his estimate of the achievements of American medicine both just and moderate, scores deservedly a certain class of our journals, and cordially endorses his proposal to appoint a Minister of Public Health.

TRANSACTIONS OF FOREIGN SOCIETIES.

German.

A FAMILY WITH CYSTINURIA—APPENDICITIS "LARVATA"—DIFFERENCE BETWEEN EPIDEMIC AND SPORADIC CASES OF CEREBROSPINAL MENINGITIS—MISTAKES IN DIAGNOSIS AFTER RUPTURE OF THE GALL-BLADDER—ENDOVSICAL PHOTOGRAPHS.

AT the Berlin Medical Society, May 10, 1899, COHN described a case of cystin calculus of the bladder which occurred in an eight-year-old girl. The stone was removed suprapubically and the child recovered. The interesting feature of this case was the fact that the mother of the child and five other children also at various times passed urine containing cystin, while the father and two grown sons always passed urine which was free from it. The occurrence of cystin in the urine of several members of one family was noted many years ago, but no such remarkable coincidence as this one has before been reported.

May 17th EWALD spoke of a type of appendicitis which he designated by the name "larvata." The symptoms are those of disturbed intestinal action with blood and mucus in the stools, and also loss of appetite and indigestion. The trouble goes on for years, sometimes better and sometimes worse, and usually the diagnosis is not made for a long time. When questioned the patient will admit having had a good deal of pain in the region of the appendix and ascending colon, and upon operation

these structures will be found to be much thickened. It has been suggested that the sudden improvement which follows an operation of this character does good by suggestion. Ewald was sure that this was not the true explanation in his own experience, for three reasons: All his patients so operated upon were not hysterical. They may have been nervous on account of the long-continued, painful attacks, but not hysterical. In the second place the suggestive effects of an operation, though they may be immediate and striking, wear off after a while and the old symptoms return. This was not true of his patients as some of them had remained well for over five years. But the strangest proof of all, that the effects of operation were not suggestive, is that patients who had painful symptoms due to disorders of the stomach or intestine continued to have the same symptoms after those referable to the appendix had disappeared.

SENATOR objected to the use of the term *larvata* in this connection. The cases of appendicitis to which the speaker had referred were not larvated in the sense that malaria may be, and nothing was to be gained by calling them so. They were, properly speaking, cases of appendicitis in which diagnosis was difficult.

At the Union for Internal Medicine, May 15th, STADELMANN spoke of the difference between epidemic and sporadic cases of cerebrospinal meningitis, having recently treated a case of the latter with success. The patient was a young man, and although at one time he was comatose, with Cheyne-Stokes respiration, and a thready pulse, he fully recovered. Several lumbar punctures were made, not for their therapeutic value, but to establish the diagnosis and to note the progress of the disease. As the case progressed toward recovery the turbidity of the fluid grew to be less and there was a destruction of the pus-corporcles. The fluid contained a short rod-like bacillus.

At the Imperial Society of Physicians of Vienna, May 13th, HOCHENEGG presented a patient, a female aged forty-seven years, who had suffered from symptoms of intestinal obstruction, immediately after an intense abdominal pain. There was a doughy tumor at the umbilicus, and a diagnosis of volvulus of the transverse colon was made. Laparotomy was performed, and about six quarts of bile-stained fluid was washed out of the abdominal cavity. An old distended gall-bladder had ruptured.

FABRICIUS mentioned three cases of rupture of the gall-bladder in which a correct diagnosis was not made. In the first, on account of the umbilical swelling, a hernia was thought of; in the second, the tumor was so hard that it was mistaken for a fibroma; while in the third case, the escaped fluid penetrated the sheath of the rectus muscle and set up an abscess.

At the Vienna Medical Club, May 10th, LANG showed photographs of vesical mucous membrane taken during life by means of an improved cystoscope, his own modification. The actual negatives were about 3 mm. in diameter, but they were enlarged about ten diameters, so as to make it possible to see details more clearly. The instrument also prevented any trembling, which is cer-

tain to spoil a photograph of this sort. The instruments were sterilized by exposure for an hour and a half to formalin vapor.

SOCIETY PROCEEDINGS.

THE NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, Held Thursday, June 1, 1899.

THE President, DR. WILLIAM H. THOMSON, in the Chair. The paper of the evening was by DR. HENRY D. CHAPIN, and was entitled "The Treatment of Summer Diarrhea in Infants" (see page 65). The discussion was opened by DR. L. EMMETT HOLT, who said in brief: The most important consideration as regards the lessening of the death-rate from diarrhea among infants in our large cities in the summer time is the matter of intelligent prophylaxis. For this the most practical means at hand would seem to be the dissemination of literature among the ignorant classes. In the tenement-house district, especially, is the information scattered by leaflets containing definite directions as to the feeding and care of children in the hot weather of special importance. There is no doubt in the minds of any who have had experience in this matter of the great possibilities for good that are contained in this work.

Dispensary practice among the very poor serves to show how extremely necessary seemingly the most obvious information on such matters is. The most ludicrous, if they were not so serious and apt to be so fatal, mistakes are made by mothers who might easily be expected to know better. The distribution of a leaflet containing the necessary directions as to the care of children in summer was contemplated two years ago, but for some reason the idea was abandoned. It is to be hoped that the New York City Board of Health will again take up the work in this line, for there is not the slightest doubt that great good can be accomplished in this way.

As to the actual treatment of diarrhetic conditions time is the most important element for their cure. If they can only be treated in time there is but very little danger. Twelve hours is more precious for therapeutic purposes at the beginning of the sickness than is a whole week of medication later on. The trouble is, however, that beginning diarrheas are neglected. They are attributed to teething, to a cold, to the weather, and it is thought they will get better of themselves or with some simple household remedy, and with some slight modification of diet. In twenty-four hours, perhaps, a fatal diarrhetic condition that defies all treatment is lighted up. Four or more movements a day in the child are allowed to occur for some days without seeking relief for them. The infection gains a firm hold by irritation of the intestine, and then cannot be eradicated before it has produced serious effects.

In children with whom simple milk does not agree the dilution of the proteids of the milk by some carbohydrate is often of great service as a prophylactic against diarrhea. A number of the cereals may be used for this purpose, and there is no doubt that they have a good effect.

Arthur Keller has shown by a recent series of experiments that *in vitro*, at least, the presence of carbohydrates prevents the putrefaction of proteids. We thus get a scientific confirmation of what we have known for a long time clinically to be the case, that intestinal putrefaction of milk is prevented by mixture with cereals.

Once the diarrheic condition has asserted itself there should be no hesitation as to taking radical measures. Mere modification of diet will not suffice. The practitioner is tempted to temporize, and hopes that the condition will not prove serious. This is always a serious and may prove a fatal mistake. Stop all food at once until there is a decided improvement in the intestinal condition. The indication is to get the stomach and intestines empty as soon as possible. For this irrigation of the intestines is the best therapeutic means, not once only, for after the lower bowel has been washed out for some hours, other material comes down into it, and this too may be removed, and some of the toxic absorption and a certain number of the intestinal micro-organisms be gotten rid of. In ordinarily severe cases irrigation may be practised four or five times a day. In bad cases when the temperature runs up to 105°F . the intestines should be irrigated every two hours, at first with warm water (100° to 105°F .) to get its cleansing, relaxing effect, and then with cooler water to help bring down the temperature. Washing out the stomach is also good, especially at the beginning of an attack.

All food should be stopped absolutely for twelve hours or longer. Water may be given freely, and stimulants are often good. It must be remembered that even sterile milk does not stay sterile long in an infected digestive tract, and that its presence only irritates, while the milk itself forms an excellent culture medium for the growth of micro-organisms that are present.

DR. ABRAHAM JACOBI said that there are times when one feels that one has not lived in vain. Such occasions almost compensate, though they are seldom enough, alas, for the number of times when one feels that one has accomplished nothing. It is refreshing, indeed, to hear the recommendation to mix cereals with milk given so freely after one has been teaching the doctrine for thirty to forty years. Years ago he counselled the suspension of the casein of the milk in oatmeal or barley-water by proper dilution. It certainly produces a more flocculent curd. Of late years the idea has been taken up very enthusiastically in certain parts of Europe. Professor Heubner, for instance, who holds Henoeh's chair at Berlin, has taken up the matter of the mixture of milk with cereals, and is teaching it very emphatically.

With regard to leaflets to be distributed to the poor containing instructions for the feeding of infants, he believes very fully in their usefulness. More than twenty-five years ago at the request of the New York Board of Health he prepared such a leaflet, and for nearly twenty years it was regularly distributed. About five years ago its further dissemination was given up for some unknown reason. There is only one thing in the old leaflet that it would seem desirable to change and that is the direction to add bicarbonate of soda to the milk when

it cannot be procured fresh. Adding to the alkalinity in this way only makes the milk a better culture medium for micro-organisms and this should be avoided.

It is not by any means a new observation that the presence of carbohydrates prevents putrefaction. It has been known that they readily undergo fermentation and that in this process free acids are formed. The presence of free acid acts as an inhibitory agent to the microbes that produce putrefaction. The use of cereals in baby-food is then at once a preventive and a curative agent in certain intestinal disorders.

It has long been the custom to say that no amylaceous substances should enter into a young infant's food because it has from nature at an early age no ferment capable of digesting starch. Even admitting this, however, the addition of carbohydrates to the child's dietary supplies a certain amount of ballast to artificial food. In mother's milk this ballast is provided mainly in the fat which constitutes 10 to 12 per cent. of the excrement of nursing babies. It is not true, however, that even very young infants have no ferment capable of digesting starchy material. The saliva of a newly born child, and it is wrong to say that there is no saliva at this age, will dextrinize starch as any one who wishes may prove for himself. That the parotid gland of a healthy fetus after three months of age contains an amylolytic ferment has been proven over and over again. The submaxillary gland contains a similar ferment to that in the parotid gland from the beginning. Starch digestion is then very natural to the infant and the mixture of this material in artificial food provided for it is indicated at all ages.

DR. KOPLIK said that he thought preventive measures should be more insisted on than had been the case in the discussion, and especially that summer diarrheas should be treated rigorously in their very earliest incipency. A slight frequency of stools, especially if they are of watery consistency and if accompanied by the slightest inclination to vomit, should be the signal to stop all feeding at once. Then the bowel should be promptly cleaned out and the stomach also if thought advisable. The one thing that must be the doctor's object is to prevent the development of serious diarrheas. Very little can be done for the severer forms of the affection and prophylaxis is our only hope.

Here in New York City we are at least twenty hours away from our milk-supply, so that there is no hope of getting anything like fresh milk. Under these circumstances he was surprised that the necessity for the sterilization of all milk to be given infants had not been more insisted on by the preceding speakers. After thorough sterilization the milk should be cooled rapidly in order to prevent the separation of the cream from it to too great extent. Pasteurized milk though much confidence had been placed in it for the prevention of summer diarrheas has not been found satisfactory. It is liable for reasons not well understood just yet to set up slight diarrheic conditions and cause some gastro-intestinal irritation so that its use is not advisable.

As to the mixture of a certain amount of the cereals with milk for infant feeding his opinion accords more

or less with what had been said by others. The current of medical sentiment is settling in this direction. In some cases certainly they give excellent results, in others they are very disappointing. There seems to be no special method of deciding in any given case whether they will agree with the little patient or not so that the only thing is to try their effect and note the results.

As to drugs very little dependence can be placed on them in the severe diarrheas of the summer time. When a practitioner thinks that he does a great deal of good with drugs he is evidently not an acute clinical observer. Divided doses of calomel are often claimed to be of service, but of late years he has learned to distrust any specific action this might have through its effect on the biliary secretion, or because of its supposed intestinal antiseptic effect. Opium he would never advise. It sometimes does some good by quieting the child, but should be given only in very small doses. It is better to have a restless child than one in whom opium helps on a fatal stupor.

In a severe case of summer diarrheæ the first indication is to wash out the stomach, remove fermenting material and prevent the absorption of toxic materials from the gastro-intestinal tract. This lavage need not be repeated. The intestines should be washed out frequently, however. It removes peccant material; it stimulates peristalsis, which also helps to remove undesirable irritating substances, and it supplies water to the infant, a very useful measure since it is well known that the child is water-starved. A stiff rubber rectal tube, such as is used for adults, may be used without fear. Too much pressure should not be employed, however, in forcing water into the intestines as it is possible to burst them. The irrigator should not be placed more than one foot above the patient. It is a good plan to try and leave considerable water in the intestine when the irrigation is concluded. About a pint of normal salt solution should be employed. This is absorbed better than simple water and besides is less irritating. After improvement begins it is not easy to go back to milk at once. At first it should be well diluted to insure its not setting up a relapse to the former condition.

DR. GRAHAM LUSK detailed some observations that he had made on young pigs. Beginning when they were two days old he had fed them on skimmed cow's milk. To a certain number he gave only cow's milk skimmed, to others skimmed milk to which two per cent. of sugar was added, to others skimmed milk with two per cent. of dextrose. Those fed only on skimmed milk did not thrive. They were thin and scraggy looking and failed to grow properly. Those fed with skimmed milk and sugar did reasonably well, while those fed also on dextrose grew vigorously. This substance is a cereal product, so that these recent observations would seem to confirm Dr. Jacobi's long-standing opinion as to the value of cereals, when added to milk, for the feeding of the very young.

In closing the discussion DR. CHAPIN said that despite certain prejudices in the matter that are rather widespread, a certain small amount of cereals does not cause, but

rather checks diarrhea. They are not, it is true, as Dr. Koplik said, always effective, but milk diluted with oatmeal or barley-water always is tolerated better than if diluted with plain water. He thinks that as a rule pasteurization suffices to make milk safe for infant consumption. In very hot weather it is safer to sterilize. It must be remembered, however, that it is not enough merely to stop fermentation in the milk and that the destruction of the micro-organisms in it makes it fit for use. If the milk is old and fermenting processes have been going on in it for some time changes have been made in the substance of the milk that may make it unfit for use. It would be a great advantage if we could obtain fresher milk in this city than at present; if instead of receiving milk 20-24 hours old, or even older, we could obtain milk 10-12 hours old. This constitutes a field for the most serious effort and one in which successful effort will be most fruitful in saving the lives of city children.

THE AMERICAN ORTHOPEDIC ASSOCIATION.

Abstract of the Proceedings of the Thirteenth Annual Meeting, Held at New York, May 31, and June 1 and 2, 1899.

THE president, DR. W. R. TOWNSEND of New York, opened the meeting with the reading of the annual address. He reviewed the history of orthopedics in America and showed that the profession of New York City had been mainly instrumental in bringing about the improvements in this branch of surgery in America and throughout the world. Four names especially stand out: James Knight, the philanthropist; Charles Fayette Taylor, the mechanical genius and enthusiastic leader; Lewis Sayre, the impressive teacher and eminent author; and Henry G. Davis, who revolutionized the treatment of joint and spinal disease and whose originality and genius made him the father of American orthopedic surgery.

DR. E. H. BRADFORD of Boston then read a paper, entitled "In Memoriam of Dr. Charles Fayette Taylor," in which he referred to Dr. Taylor as the founder of modern practical orthopedics and said that every meeting of the American Orthopedic Association is and would ever be a tribute to his work.

The next paper, on "Degeneracy as a Causative Factor in the Production of Scoliosis" by DR. JOHN RIDLON of Chicago, will appear in a subsequent issue of the MEDICAL NEWS.

DR. E. G. BRACKETT of Boston then read a paper prepared by himself and DR. E. H. BRADFORD, entitled "The Forcible Correction of Lateral Curvature." He said that it is well known that even bone will yield to continuous pressure. The difficulty has been the retention of affected parts in positions in which pressure could be exercised. When the patient is in the recumbent position the advantage of the superincumbent weight is lost as an aid. A properly fitting and applied apparatus can be made to avail itself of this. The cast should be applied in a Bradford frame, which enables one to do away with the disadvantage of the superincumbent weight and use it as a corrective.

Pressure should be applied at three points, particularly behind, of which that of greatest deformity is the principal one, and others above and below while counter-pressure is exercised on points on the opposite side of the body. The great objection to the use of jackets in scoliosis is that the point of greatest counter-pressure is over the concavity of the curve of the deformity on the opposite side. The tendency this has to emphasize the deformity may be corrected by a collar around the neck that takes up most of the counter-pressure.

The cases for which forcible correction with retention as far as possible in the corrected position is necessary are those in which there is bony change and in which bony development is still expected. The greater the deformity the more is this method indicated. It serves a very useful purpose in children who are too weak for gymnastics, or who are not sufficiently under control to be put through regular exercises. The amount of correction that follows three or four applications of the jacket is often wonderful. After the primary improvement, however, there is a period of comparative standstill during which other methods may be used with advantage.

DR. TESCHNER of New York followed with a paper, entitled "The Heavyweight Treatment of Post-paralytic Deformities, Including Lateral Curvatures." He has had six cases in which he has been able to restore function to seemingly degenerated muscles by graduated exercises so arranged that finally eight- to ten- or even fifteen-pound dumbbells were employed. He has the patient, with frequent rests, put forth each time all the strength he is capable of. Three of his cases were obstetric hemiplegias with atrophy of muscles, yet a great deal of improvement took place. Reaction of degeneration in muscles disappeared during the course of the exercises and were replaced by normal muscular reactions. He considers that the muscular fibers intact in the muscle are developed to their fullest extent, and that there is under the stimulus of exercise an actual development of muscle substance.

DR. WALTER TRUSLOW then read a paper, entitled "Some Remarks on the Class Method of Gymnastic Treatment in Lateral Curvature," which will appear in a subsequent issue of the MEDICAL NEWS.

DR. AUGUSTUS THORNDIKE of Boston read a paper, entitled "Congenital Deformities of the Spine." He discussed the two forms, spina bifida and rachischisis, and exhibited illustrations of the various forms, and of their association with forms of anencephalus, meningoencephalocele, and other congenital abnormalities. Before operation the tumors need to be carefully protected from abrasion and infection. There are two practically absolute contraindications to operation, marasmus and the presence of hydrocephalus as a complication.

Rupture of the sac is usually enough to justify immediate operation as infection is almost sure to follow. Convulsions, if due to internal pressure, may sometimes be relieved by puncture and evacuation of the sac, but this gives but temporary relief and is usually employed only in acute cases where the operator is not ready for more

radical measures. Two methods of radical cure are employed, excision and the injection of iodine. Excision is the ideal operation. Iodine has undoubtedly cured certain forms of simple meningocele, but it is so difficult to distinguish them from the others that excision is preferable.

DR. L. A. WEIGEL of Rochester, N. Y., then read a paper, entitled "The Diagnostic Value of Radiography in Orthopedic and General Surgery, Illustrated by Stereoscopic Views." He showed that it is possible to detect even small foci of tuberculosis of bone by the X-rays. In the head of the tibia and in the os calcis by a number of views it was demonstrated that lighter areas due to porosity of the bone occurred in the radiograms, when there was only tenderness and usually no swelling present in the vicinity. In hip-joint disease he has found the pelvis on the side of the lesion markedly smaller and atrophic as compared with the other side.

In a series of injuries in which at the time no evidence of fracture could be obtained, yet serious deformity followed, the Röntgen-rays had shown various bony lesions, a fracture of the olecranon, a comminuted fracture of the acromion, fractures of the styloid process of the radius, followed by the throwing out of a large amount of plastic material, etc. In a case of supposed forcing of the tibia and fibula apart the astragalus had been found comminuted. Fractures of the neck of the os calcis were demonstrated in obscure cases. Fibrous deposit between joint surfaces can be detected even in such obscure situations as the lower jaw. Gonorrheal rheumatism in some cases produces a change in the periosteum and ends of the bones that may be demonstrated in the same way. Spontaneous dislocation of the hip such as occurs in typhoid was illustrated and its progress demonstrated.

DR. W. BURTON HOPKINS followed with a paper on "Pigeon Toe." He considers that there are quite a number of cases of this deformity amenable to direct treatment. As a rule parents consider this turning in of the toes at first in the child as they do a stoop or a swaying of the back, as a childish trick. In some cases one toe turns in much more than another. For these he has invented an instrument which turns the toe outward just as the heel comes down. At first he employed a spring set in the heel of the shoe; now he has modified the instrument so that it works on ball-bearings and is practically indestructible.

The report of the Committee on Recording Lateral Curvature was to the effect that photography constitutes the best method available at present for recording these spinal deviations, the method least open to error because of the personal equation, the one that is easiest to make and can be best understood by the general practitioner as well as the specialist without difficulty. As a means of controlling photographic records the method recommended by Kirchoff and somewhat modified by Brackett is suggested as simple and reliable. Its essential feature is the dropping of a plumb-line from the neck and measuring the distance of various parts of the scoliotic curve of the spines of the vertebrae from it in the various regions.

On motion of DR. WILSON of Philadelphia the report

of the committee was accepted, but no method of recording lateral curvature was recommended by the Association because none as yet described seems sufficiently definite and accurate.

DR. JOEL E. GOLDTHWAIT of Boston read a paper, entitled "A Study of Pott's Paraplegia as Affected by Correction of the Spinal Deformity." In eleven cases he has found that correction of the deformity has always been followed by immediate disappearance, *i.e.*, within a few hours or less of the paraplegic symptoms. The improvement has persisted in all the adult cases, though there has been some recurrence of symptoms in children. No force other than the patient's own weight was used in securing the correction.

DR. GOLDTHWAIT then read a paper, entitled "Osteoarthritis of the Spine, with Report of Nine Cases." Osteoarthritis of the spine or spondylitis deformans is really only the spinal form of a disease that may extend to all the joints. So far thirty-five cases under different names have been reported in the literature. To these the speaker adds nine.

The typical symptom is the rigidity of the spine which may begin in spasm of the muscles and then gradually ends in a fusion of the vertebrae. The ribs may become involved and the whole thorax become immovable when respiration will be entirely diaphragmatic. Improvement often occurs after the disease has reached its acme.

Certain text-book declarations as to the disease are not borne out by careful study of the cases. It is not exclusively a disease of the old but occurs oftener in early middle life and not infrequently in closing adolescence. It is not limited to the large joints as is often stated but may involve the fingers. It may not give the characteristic deformity of kyphosis or scoliosis but may make the spine rigid with all its curves preserved.

In the group of cases that are usually supposed to come under the head of spondylitis deformans there are really either two distinct diseases or two very divergent types of the same disease. The one form is more properly designated a rheumatoid arthritis and is atrophic in character and leads to the disappearance of portions of the normal joint; the other is a productive osteitis. Nodular projections occur on the long parts and these fuse together producing the ankylosis that is noted as such a prominent sign of this type.

As to the cause of the ailment in either of its forms nothing is definitely known. Gonorrheal rheumatism and other unusual forms of arthritis have been thought to be responsible for it, but their etiological connection is not proven. Dr. Goldthwait finds in his own cases and in certain ones reported in the literature that patients subjected to extremes of temperature are especially liable to suffer from it, firemen, stokers, engineers, and the like. As to treatment, stimulating baths are good, but frequent hot baths, though employed by some, are debilitating and do harm. Regarding hot-air treatment the same is true; it must not be employed so much as to weaken the patient.

DR. G. G. DAVIS of Philadelphia read a paper, entitled "Operative Treatment of Congenital Dislocation of

the Hip." He described two new instruments for making or deepening the acetabulum in these cases; one a heavy spoon-shaped gage chisel, the other a half rose-burr, somewhat like a trephine, especially adapted for making a shoulder against which the head of the femur would rest in the new acetabulum.

DR. W. J. TAYLOR of Philadelphia then read a paper, entitled "Report of a Case of Dorsal Dislocation of the Hip Occurring Spontaneously During the Course of an Acute Osteomyelitis of the Neck and Shaft of the Femur." The case was thought at first to be one of tubercular hip-joint disease; an abscess formed and opened of itself. After this spontaneous dislocation upon the dorsum ilii took place. This led to suspicion as to the cause of the process, when a free incision showed that the original affection had been an acute osteomyelitis of the shaft of the femur. The process involved the bone for some distance from the joint, and abscesses had formed beneath the periosteum and within the bone itself. These were evacuated and thoroughly scraped, though the patient's low condition did not allow of doing all that was desired in the matter. Recovery took place with four inches of shortening.

The disease started at the epiphyseal line which is within the capsule, and rupture took place into the joint. Distention of the capsule was the mechanical factor favoring dislocation, and the mechanism of the lesion is exactly the same as that which takes place in typhoid. The practical point to be borne in mind is that relief of the distention of the capsule may prevent spontaneous dislocation, if aspiration, or puncture, and drainage is done in time. In general, harm to joint structures is done by allowing distention to continue long in any joint, so that the advisability to removing some of the fluid should always be borne in mind.

DR. W. E. WIRT of Cleveland, Ohio, followed with a paper, entitled "Reduction of Congenital Hip Dislocation by the Lorenz Method." If taken at an early age he has found that very good results can be obtained by the bloodless method of Lorenz in the severest cases of congenital dislocation of the hip. In one of his cases relapse occurred because no apparatus was used after two months. He employs a bandage with a pressure pad to retain the head of the femur in place. This must be worn for 4-6 months to insure against recurrence of the deformity. The use of a high heel on the affected side as recommended by Lorenz is also of use in keeping the bone in place. Sometimes it is extremely hard to get the head of the femur down to its place, and Dr. Wirt has used as high as 200 pounds traction before the operation and yet had difficulty during the operation. The younger the children when operated upon the less the difficulty and the better the result.

DR. H. M. SHERMAN of San Francisco then read a paper, entitled "Congenital Dislocation of the Hip." He has performed eleven bloody or open operations according to the Lorenz method. In these the results have been as follows: Three are stable, *i.e.*, the head of the femur remains in place but there has been ankylosis; one is stable and there is a certain amount of motion. There is also

a certain amount of shortening, and for some unknown reason this is increasing. One is stable and ankylosed and the ankylosis has been broken up giving motion, but the typical gait of the short-necked femur remains. Three luxated again and are failures. Both hips of one child operated upon ankylosed, causing a very awkward gait which was improved by the recurrence of luxation of one hip. He has operated on thirteen hips by the bloodless method, of which seven have recurred. Lately he has operated with the Lorenz manipulations, but has convinced himself of the presence of the head of the bone in the acetabulum by an incision and actual palpation of the conditions. He has been better satisfied with this method though about one-third of them have definitely reluxated and a certain number of them are still in splints and the ultimate results are uncertain. He thinks there must be some way of correcting the deformity, but up to this we have not found the way.

DR. R. T. TAYLOR of Baltimore then demonstrated the kyphotone, a machine for the forcible correction of the deformity of Pott's disease. It consists of an arm attached to the upright from which the patient is suspended, by which pressure is brought to bear immediately over the most prominent part of the deformity of Pott's disease thus securing the greatest possible amount of correction as the jacket is put on. He also exhibited an inclined plane of nickeled steel-tubing, light and easily adjustable, and eminently cleanly for use in fractures and the treatment of deformities.

DR. ROYAL WHITMAN of New York then read a paper, entitled "Further Observations on the Treatment of Congenital Dislocation of the Hip. Exhibition of Patients," which will appear in a subsequent issue of the MEDICAL NEWS.

DR. T. HALSTEAD MYERS followed with a paper on "Cases of Coxa Vara and Congenital Dislocation of the Hip. Exhibition of Patients." The case of congenital luxation of the hip was the first one operated on by the Lorenz method in this country and the result is perfect.

Patients suffering from different varieties of orthopedic disease were then exhibited by Drs. Ketch, Waterman, Taylor, and Townsend, after which DR. A. M. PHELPS of New York read a paper, entitled "Report of Cases of Tubercular and Purulent Abscesses of Joints, Treated with Pure Carbolic Acid." He said that he first washed his hands in pure carbolic acid and, after allowing it to remain for a minute, washed it off with alcohol. This he considers demonstrates that alcohol is the antidote to carbolic acid locally. Taking advantage of this he swabs out all cavities thoroughly with pure carbolic acid, and then washes them out with alcohol and later with water. In tuberculous cases he obtains primary union by means of this even in long-standing suppurative cases. Where the patients remained in the hospital for months before they now stay weeks. In three or four weeks they may be discharged cured, while four months did not seem long before.

In cases of erysipelas with high fever the effect of the application of carbolic and its subsequent neutralization had been most marked. A drop of four to five degrees

in temperature took place, and the erysipelatous process ceased to spread. In Dr. Phelps' own case when septic infection had set up lymphangitis the same sort of an application had lowered the fever, relieved the symptoms, and made him feel much easier. What theory explains this action he does not know; perhaps there is a change produced in the subcutaneous layers with absorption of phenic or other albuminoids. The effect is certainly produced, and there would seem to be great promise in the use of the remedy in the various affections mentioned.

DR. ARELLANA, Dr. Phelps' assistant at the City Hospital of New York City, read a paper on "Cases of Erysipelas with High Temperature, Treated by Applications of Carbolic Acid, with Subsequent Neutralization by Alcohol." In a series of some ten cases of erysipelas of the face and neck, with temperatures ranging from 104.5° to 105.5° F., applications of pure carbolic acid were followed in from eight to twelve hours by a drop of from 3° to 5°, and the process ceased to spread. In about one-third of the cases a second application had to be made, but never a third. No other method of treatment, local or internal, was employed, and all of the patients recovered, though it is among such that fatal cases of erysipelas are often found. In none of the cases has there been any smoky urine, or any change in the urinary secretion, and no sign of any carbolic-acid poisoning has developed, though they have been carefully looked for.

DR. G. G. DAVIS of Philadelphia presented a new osteoclast and a new instrument for flat feet and for paralysis with drop-foot to be worn inside the shoe.

DR. WIRT of Cleveland presented a new knee-brace for correcting deformity and a pocket goniometer.

DR. S. L. MCCURDY presented a new apparatus for the support of the head in cervical Pott's disease with supports on the sternum and back below and chin and occipital pads above.

DR. H. M. SHERMAN of San Francisco read a paper, entitled "Position Symptoms in Joint Disease." He said in brief that the position assumed in joint affections is a valuable clinical symptom of the amount of inflammation present and the stage of the affection and has long been acknowledged as such. There has not been the same agreement as to the reason for the positions observed. The French explanation that the amount of the effusion into the joint causes the various positions by tension on the capsule or by its rupture late in the affection is no longer accepted. The idea that one set of muscles is stronger than the other and that both being irritated the stronger flexors overcome the extensors supposes a struggle for superiority between muscles that does not exist. Dr. Sherman considers that the position assumed is due to the reflex call for rest for the affected parts which causes not a spasm but a tonic contraction of muscles fixing the limb in a definite position where there is least discomfort. When this tonic contraction relaxes for any reason, as during sleep, then there occur the starting pains so often noted. This muscular fixation is, however, but a small part of the mechanism as bones and ligaments and capsular tissues share in the reflex demand for rest.

DR. B. E. MCKENZIE of Toronto read a paper, en-

titled "Some Salient Points in the Treatment of Hip Disease," which will appear in a subsequent issue of the MEDICAL NEWS.

DR. C. L. STARR of Toronto followed with a paper on "The Conservative Surgical Treatment of Tuberculous Disease of the Joints." He considers the ideal surgical treatment for a tuberculous focus in bone to be to cut down and remove it before it had invaded important structures and caused extensive destruction of tissue. The first definite focus of tuberculosis is situated at the epiphysis, which accounts for the fact that the very young and the old are not attacked. In the very young the hyperemia here increases the resistive vitality; in the old, fatty changes have made the parts a poor culture medium for the bacillus tuberculosis.

There are certain cases in which we are unable to diagnose the presence of a tubercular focus before it has invaded the joint. Pain is not very valuable as a diagnostic sign of the position of a lesion because of its liability to be reflected from and referred to other points than the affected one along nerves. Tenderness is, however, of the greatest service and will very often enable one to diagnose with assurance.

The indication is to open up at once and scrape away all the diseased bone. In the head of the tibia or in the malleolus this is often very feasible and can be done successfully in the femur. The cavity made should be swabbed out with carbolic acid or with chlorid of zinc and then packed with iodoform gauze. Healing in selected cases is prompt and complete. So far no recurrences have been noted.

DR. A. B. JUDSON then read a paper, entitled "Additional Views on the Treatment of Hip Disease." He said that a great deal can be done to correct the gait of cured hip-joint disease with shortening, by training the patients to walk. Girls with two or three inches of shortening often walk marvelously well. Boys more neglectful with less shortening walk very awkwardly. Military training and the keeping of time is a good drill for these children. The parents must be impressed with the idea that constant watchfulness and care in the matter of the best possible gait will lead to improvement in this matter. A deliberate turned step must be adopted. If this care of the walk is attended to the surgeon need never fear ankylosis in a bad position.

DR. S. H. MCKIM of Baltimore then read a paper prepared by himself and DR. R. T. TAYLOR, entitled "Some Clinical Features of Rheumatoid Arthritis." Among the clinical features of the disease not usually pointed out the authors dwell on the frequent occurrence of polyadenitis of the lymphatic system and enlargement of the spleen. The systems of glands especially affected are those nearest the diseased joints, the epitrochlear, the inguinal, and the posterior cervical. Slight exophthalmos often exists, and there is frequently some fever. The febrile course is of two types, either acute, lasting for but a few days at the beginning, or continuous for some time when it is milder. Garrod still believes that the disease is a gouty or rheumatic manifestation, but most of the authorities agree with Osler, who considers it a

nervous condition. The differential diagnosis must be made from subacute rheumatism, in which the changes around the joints are fibrous in character and not the nodular enlargements met with in the productive variety of rheumatoid arthritis. Charcot's disease occurs in older people as a rule, though at times, too, in young people, but gives clear evidence of being trophic in character. It must be borne in mind that the starting pains at night may occur in rheumatoid arthritis as well as in tuberculous joint disease and this fact must be remembered in making the diagnosis. Very little seems to be accomplished by any treatment. Ordinary rheumatic, alterative, or absorptive remedies appear not to affect the course of the disease or any of its symptoms. Even the breaking up of adhesions under ether seems to do little if any good.

DR. J. D. GRIFFITH of Kansas City then read a paper on "A New Method of Reducing Ancient Dislocations of the Humerus by Open Incision." In three cases he found that by cutting the long head of the biceps the head of the bone slipped back comparatively easily. As a number of deaths have been reported from the use of force in these cases because of rupture of the axillary vein, this bit of technic seems worth bearing in mind. He exhibited an instrument shaped like a very large periosteal elevator, devised to assist in throwing the head of the humerus back into the glenoid fossa.

DR. S. L. MCCURDY of Pittsburgh read a paper on "Heat as a Therapeutic Measure." In chronic joint disease bacterial growth may be inhibited by keeping the joint subject to temperatures of 140° F. for hours and metabolic processes are increased and absorption of inflammatory products take place. The difficulty is that living tissues cannot be elevated in temperature sufficiently to accomplish either of these ends without hurting cell-life so much as to do more harm than good.

DR. B. E. MCKENZIE of Toronto read a paper, entitled "Surgical Intervention in Spastic Paralysis (Cerebral Palsies)." He said that these unfortunate patients, owing to the prevalence of the idea that the basis of their symptoms is a lesion of the central nervous system, and that nothing, consequently, can be done to permanently improve them, have received in the past too little attention. He has found that all of them are benefited by properly directed treatment. He cuts the tendons of spasmodically contracted muscles and puts the limbs up in casts to secure elongation on union. The adductors he has found especially subject to contraction and after section he fixes the legs at an angle of 90°. Relapses may occur and then he tenotomizes again or does a myotomy. The children are soon able to walk and their association with other children soon improves their mental qualities. They grow much more intelligent. Apparatus can be dispensed with after a time, or need be worn only at night. Training and gymnastic exercises serve to get the children into better general health. The absence of the reflexes set up by the continuous spasm gives the child an opportunity to develop physically and mentally in a way that is most satisfactory.

DR. A. B. JUDSON of New York then read a paper,

entitled "Prothesis, a Branch of Orthopedic Practice." He exhibited sets of apparatus designed to hide deformity and make up for various disabilities. A perfectly normal looking shoe for considerable shortening after hip disease, the foot being supported on a cleverly constructed inclined plane within it, was the most striking.

DR. DANIEL LA FERTE of Detroit, Mich., then read a paper, entitled "The Cause of Failure after Phelps' Operation for Club-foot." In his experience failure has been invariably due to the fact that not enough tissue was divided to permit correction of the foot. Everything that resists the reposition of the foot to a normal position and a little beyond should be freely divided. This may require division of certain ligaments of the joints, as well as skin, fascia and muscles; even the posterior ligament of the ankle beneath the tendo-Achillis may require division.

DR. ARTHUR GILLETTE of St. Paul, Minn., followed with a paper, entitled "The State Care of Crippled Children." He stated the necessity for State care for such children when relatives are poor, and detailed the successful effort that has been made in Minnesota in securing State aid for an orthopedic department. The success achieved has made the gaining of further State aid easier, and now the outlook for orthopedics for the needy is good. Patients are taken only on the recommendation of physicians and the manner of conducting the affair through the Legislature, may prove of help to others who have similar objects in view.

DR. RUSSELL A. HIBBS of New York then read a paper, entitled "A Preliminary Report of a Study of Shortening of the Tibia in Connection with Tuberculous Disease of the Hip." In a previous paper he had shown that in 110 cases of hip-joint disease there was distinct shortening of the femur. The most shortening occurred in non-suppurative cases so that it was due not merely to loss of bone but to nervous or circulatory causes. He has now examined the tibias in 41 cases, and has found that this bone also is shortened in most cases, and in many more than the femur of the corresponding side. There is then a nervous or circulatory disturbance that interferes with the nutrition of the whole limb.

REVIEWS.

AN EXPERIMENTAL RESEARCH INTO SURGICAL SHOCK. The Cartwright Prize for 1897. By GEORGE W. CRILE, A.M., M.D., PH.D., Professor of the Principles of Surgery and Applied Anatomy in the Cleveland College of Physicians and Surgeons. Philadelphia: J. B. Lippincott Company, 1899.

Any experimental evidence tending to throw light upon our knowledge of surgical shock is a welcome addition to the literature of the subject. Dr. Crile has accumulated in his researches some testimony as to the nature of this most dreaded of surgical sequels, which while not entirely new, is, nevertheless, important on account of its practical bearings.

His researches embraced operations upon animals in all regions of the body. Operations upon the brain and the abdomen seemed, under certain conditions, to pro-

voke shock more easily than operations in other parts of the body, while procedures upon the male genital organs and dragging operations in the vicinity of the pylorus and gall-bladder seemed also prone to call forth this condition. The author concludes as a result of his work that shock is primarily a vasomotor disturbance, influenced indeed by cardiac and respiratory changes. Hemorrhage the author finds a powerful factor in producing shock as it is responsible for the great change in the vasomotor efforts to maintain a mean blood pressure. The best treatment is prophylactic; but with the condition once established, the author finds experimentally that the usual clinical treatment with heat, strychnin stimulation, and saline infusions is based upon sound physiological principles.

The essay is the result of hard work and a large number of experiments and is admirably written. It deserves a high place in the literature of the subject with which it deals.

INTERNATIONAL CLINICS. A Quarterly of Clinical Lectures on Medicine, etc., with specially prepared articles on Treatment and Drugs. By PROFESSORS and LECTURERS in the Leading Medical Colleges of the United States and Foreign Countries. Vol. I. Ninth series. Philadelphia: J. B. Lippincott Company, 1899.

THE present volume contains a most varied assortment of good things, and keeps up the reputation of the Quarterly for the presentation of practical material of present interest and actual value to the practitioner. Professor H. C. Wood of the University of Pennsylvania contributes an interesting lecture on "Cold as an Antipyretic." Besides very practical suggestions as to the use of the various hydrotherapeutic remedies, there is a special section on "Air Baths." Professor Wood says: "Sometimes when cold-water baths are not to be had cold air becomes of great value for the reduction of temperature. The method at least in the winter time is of very simple application; the patient is covered with nothing but a thin sheet and the windows of the sick room widely opened until the temperature of the room has fallen sufficiently low. This cold-air treatment may be boldly employed, for patients with high temperatures cannot take cold. The thermometer must be the guide in the matter, and the patient's temperature must not be allowed to come down to the normal for it is to be remembered that the room will remain cool for some time after the windows are closed. The patient should not be exposed below the pelvis, and the legs and feet should be well protected. Any disposition to coldness of the feet is an indication for the local application of heat."

Professor Rosenheim's clinical lecture on "Chronic Constipation" is concluded, and contains some further very practical suggestions. This, for instance, seems novel on this side of the water at least. He insists on the plentiful consumption of fat for constipation, and suggests that when one form of fat is not well borne another may be; for instance, when butter disagrees things prepared in lard may not, or when both prove indigestible goose lard, or some of the vegetable table oils, may prove

palatable, produce no disagreeable symptoms, and accomplish the desired result.

Professor Eulenberg of Berlin has a very suggestive contribution on the "Present Position of the Treatment of Tabes," while Professor Fournier of Paris presents some very striking views as to the "Frequency of Cases of Unsuspected Syphilis."

From Professor Adolf Baginsky of Berlin there is a clinical report that contains a clear discussion of certain subjects in pediatrics that have attracted a good deal of attention in recent years: "Laryngospasm, Eclampsia, and Tetany in Children; Their Connection with Rachitis, and with One Another." Rachitis is generally conceded by pediatricists abroad to be the common basis from which the three symptom complexes mentioned take their origin. Incidentally, the interesting question as to the influence of an enlarged thymus in causing laryngospasms in children, and sometimes causing sudden death is discussed. Among the causes of sudden death in children mentioned is the lymphatic condition for which Professor Baginsky fails to see the necessity for creating a special rubric, as the cases included under it are only the outspoken examples of the scrofulous diathesis with which all physicians are familiar and for which a special name is not needed.

ALBUMINURIA AND BRIGHT'S DISEASE. By NESTOR TIRARD, M.D., F.R.C.P., Physician to King's College, London. London: Smith, Elder & Company, 1899.

THESE sentences from the author's introductory chapter supply a very good key-note to the contents of the book: "One of the chief difficulties connected with the term, Bright's disease, is that it has been so readily caught up by the non-medical world, and that it appears to be regarded among the laity as synonymous with albuminuria. This is much to be regretted as it frequently causes needless alarm and depression, when at some casual examination the presence of albumin in the urine has been detected."

The author might well have said that something of this same misapprehension still clings to medical minds, too. His book is eminently well planned to do away with this false impression for it is a thoroughly scientific and up-to-date discussion of albuminuria and its causes apart from Bright's disease, as well as of the various forms and phases of nephritis.

The chapter on renal or true albuminuria without definite structural change is especially complete. The discussion of the albuminuria that occurs after muscular exercise, of the albuminuria of hematogenous origin which has been noted in anemic states, especially in severe chlorosis, and of neurotic and febrile albuminuria, shows that the author has most conscientiously consulted the authorities on the subject and gleaned from the copious literature of nephritic and urinary conditions whatever is of interest and importance. The treatment of the subject of albuminuria seems especially to be commended inasmuch as a good deal of weight is laid on the opinion that physiological albuminuria is extremely rare, and that it should only be diagnosed when absolutely every possible patho-

logical condition of the kidneys can be excluded. Dr. Tirard thinks it better to be over-cautious than to lull the patients into a false sense of security by the diagnosis of physiological albuminuria, albuminuria of adolescence and the like. Many of these subjects later develop true nephritis.

In the chapters on nephritis are found excellent reviews of recent opinions with regard to congestion of the kidney, to uremia, with a complete discussion of late suggestions as to its etiology, and also the interesting question of the association of albuminuria and glycosuria which has been noted so often by recent observers, especially in severe cases of diabetes. The accompanying albuminuria makes the prognosis of these cases even worse than when severe diabetes alone exists.

LES RAYONS DE ROENTGEN ET LE DIAGNOSTIC DE LA TUBERCULOSE. Par A. BECLERE, *Medecin de l'Hôpital Saint Antoine*. Paris: J. B. Baillière et Fils, 1899.

HALF of this work is devoted to a historical sketch of the subject of X-rays with a comparison of the merits of radiology and radiography. The author believes the former superior for the study of intrathoracic lesions in which the finer distinctions of shadows are lost in skiagraphs. For a subject yet in its infancy the author takes a most optimistic view of the efficiency of the X-rays in disclosing incipient tubercular affections of the lung. The nine skiagrams included are illustrative of the supposed value of skiascopy.

ESSAYS FOR STUDENTS. By STEPHEN PAGET, F.R.C.S., Surgeon to the West London Hospital; Surgeon to the Ear and Throat Department of the Middlesex Hospital. New York: Wm. Wood & Co., 1899.

In a charming colloquial fashion the author has recorded for students actual experiences on commonplace topics: strangulated hernia, cancer of the breast, some run-over cases, and elements of aural surgery. By the perusal of these essays the student will learn how to elicit the unbiased history of any case. These notes are free from any coloring or verbosity; yet the subjects are critically treated, and the same thoughtfulness is applied to the operative advice which is thoroughly abreast of progressive surgery. We hope that the success of this volume will impel its author to venture on another on the same lines.

LES REGENERATIONS D'ORGANES. Par le DR. PAUL CARNOT, *Docteur des Sciences, Ancien Interne des Hôpitaux de Paris*. Paris: J. B. Baillière et Fils, 1899.

THIS small compendium is a compilation of data bearing on the powers of regeneration in lower and higher animal life. In the first chapter regeneration is handled from the physiological, pathological, and traumatic standpoints, and these facts elucidated by comparison with zoological and embryological phenomena together with the biomechanical forces at play in influencing ontogeny and phylogeny. Under the heading, "Regeneration of Structures Derived from Mesodermic Layer and Epidermic Layer," the practical feature of the regeneration of the in-

dividual organs is discussed. The author concludes that for vertebrates and man regeneration of function is of paramount importance to form; *i. e.*, that the conservation of function exacts the conservation of form which in many organs is assured by a diffuse hyperplasia of the entire organ in lieu of a local regeneration.

SAUNDERS' MEDICAL HAND-ATLASES. ATLAS OF DISEASES OF THE SKIN, Including an Epitome of Pathology and Treatment. By PROFESSOR DR. FRANZ MRACEK of Vienna. Authorized Translation. Edited by Henry W. Stelwagon, M.D., Clinical Professor of Dermatology in Jefferson Medical College, Philadelphia. With 63 colored plates and 39 full-page half-tone illustrations. Philadelphia: W. B. Saunders, 1899.

THE majority of medical schools in this country give but slight prominence in their curricula to the study of skin diseases, and as a result many general practitioners experience no little difficulty in formulating a correct diagnosis and instituting proper treatment in these conditions. Elaborate treatises have appeared from time to time but comparatively few have fulfilled the requirements of any save specialists in this particular branch of work.

No such criticism can be brought forward against the book under discussion. The first 191 pages are devoted to descriptions of the various skin lesions and their treatment, and the balance of the book to 104 full-page colored plates and half-tone cuts. Each illustration is drawn from life, and is accompanied by a clear and concise history of the disease in the patient whose case is pictured. A cross reference between the text and an illustration and history referring to the same disease at once simplifies the matter of diagnosis and clearly defines methods of treatment and the results which may be expected.

The translator's work has been well done and the editor's bracketed comments, while not numerous, assist in the elucidation of the text. The colored plates are masterpieces in their way, and the book-making in its entirety reflects great credit on the publisher.

SAUNDERS' MEDICAL HAND-ATLASES. ATLAS OF THE EXTERNAL DISEASES OF THE EYE, Including a Brief Treatise on the Pathology and Treatment. By PROFESSOR DR. O. HAAB of ZURICH. Authorized Translation from the German. Edited by G. E. DE SCHWEINITZ, M.D. With 76 colored plates and 6 engravings. Philadelphia: W. B. Saunders, 1899.

THIS is the American edition of Lehman's well-known series of hand atlases, and this number, on the External Diseases of the Eye, has been highly praised as a very practical presentation of the subject for the general practitioner rather than the specialist. The colored plates are very well done, and reproduce the pathological conditions with great accuracy as regards color and relations. The translation has been well done, and the practical touch of the experienced editor's hand can be noted in places, making the German text more suited to American practice. For sty, for instance, the German text writer suggests active poulticing with linseed meal to alleviate suffering, and shorten the process by bringing the

abscess to the point of spontaneous evacuation or incision. The American editor suggests that repeatedly applied compresses soaked in hot carbolyzed solution, or in hot water containing thirty-three per cent. of fluid extract of hamamelis, is preferable. Then the remark: "The conjunctival hyperemia induced by eye-strain is a constant cause of chalazia and hordeola, therefore the necessity for correcting the refraction of the eye if it is anomalous," is just the added touch necessary to complete the clinical consideration of this very practical subject, but one which a German ophthalmologist would be apt to neglect.

THERAPEUTIC HINTS.

A Combination of Ichthyol and Creasote.—The good effects obtained from the administration of each of these drugs in tubercular pulmonary affections decided HUGO GOLDMAN to use them in combination. He prescribes as follows, claiming excellent results:

℞ Creasoti	} aa	℥ ss
Ichthyol		
Glycerini	. . . . .	℥ i
Aq. menth. piper.	. . . . .	℥ iiss.

M. Sig. Twenty to 30 drops in wine or lemonade three times a day after meals. For children and weakly individuals the dose is 10 to 20 drops.

For Squamous Blepharitis.—This occurs frequently in connection with seborrhea of the scalp, and gives rise to small crusts at the ciliary border of the eyelid. A sulphur ointment serves as the most effective means of cure, but is apt to cause a burning sensation and lachrimation by entering the conjunctival sac. TERRIEN advises, therefore, a weak preparation such as the following:

℞ Sulphuris præcip.	. . . . .	gr. iii
Vasellini pur.	. . . . .	3 v.

M. Ft. unguentum. Sig. External use.

Solution for Fetidity of the Mouth.—

℞ Camphoræ	. . . . .	gr. lxxx
Ac. salicylici	} aa	3 iiss
Ol. anisi		
Pulv. benzoini	} aa	3 v
Calcis chloratæ		
Glycerini	. . . . .	℥ vi
Spiriti (forty per cent.)	. . . . .	℥ x.

M. Sig. Mouth wash. Keep in dark bottle. One teaspoonful in a glass of water.

For Favus.—

℞ Potassii carbonat.	. . . . .	3 i
Sulphuris sublim.	. . . . .	℥ ss
Tinct. iodi	} aa	℥ iiss
Picis liq.		
Adipis	. . . . .	℥ iii.

M. Ft. unguentum. Sig. External use.

A thin layer of the ointment is spread on gauze and applied to diseased areas, being renewed daily. The slight dermatitis which may result is overcome by Lassar paste.—*Pirogoff*.